SERVICE MANUAL

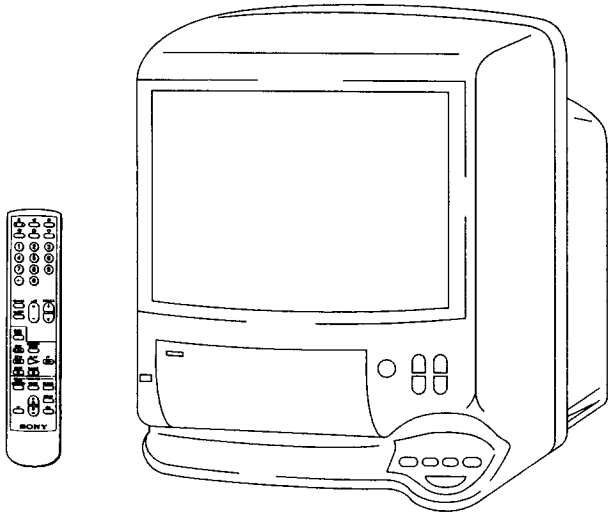
TE-1 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-V1430A	RM-Y863	Italian	SCC-J09A-A
KV-V1430B	RM-Y865	French	SCC-J10A-A
KV-V1430D	RM-Y863	AEP	SCC-K11A-A
KV-V1430E	RM-Y863	Spanish	SCC-J12A-A
KV-V1430K	RM-Y863	OIRT	SCC-J13A-A
KV-V1430U	RM-Y863	UK	SCC-J14A-A

Note :

1.Refer to the Service Manual of VHS MECHANICAL ADJUSTMENTS IV for MECHANICAL ADJUSTMENTS.

	VHS Mechanical Adjustments IV
Part No.	9-973-623-01



VHS Video
COMBO
Black Trinitron

VHS
PAL NTSC 4.43

MICROFILM

TRINITRON® COLOUR VIDEO TV

SONY®

※ Please file according to model size..... ■

SPECIFICATIONS

TV Section

Television system	See "Receivable channels"
Colour system	See "Receivable channels"
Channel coverage	See "Receivable channels"
Picture tube	Trinitron Approx. 37cm (14 5/8 inches) (Approx. 34cm picture measured diagonally)
Aerial in	75-ohm aerial socket for VHF / UHF

Video Section

Format	VHS standard
Video recording system	Rotary 2-head helical scanning system
Audio recording system	Monaural
Video signal	PAL / MESECAM
Tape speed	PAL / MESECAM : 23.39mm / sec. NTSC (playback only) : 33.35mm / sec.
Maximum recording time	240minutes with E-240

Inputs and Outputs

Inputs	LINE VIDEO : phono jack (1) 1Vp-p, 75 ohms, unbalanced, sync negative LINE IN AUDIO : phono jack (1) Input level1 : 500 mVrms (100% modulation) EURO-AV : 21-pin
Output	EURO-AV : 21-pin
Headphones jack	Monaural minijack

General

Colck	Quartz locked
Power back up	Approx. 1 day or less
Power requirements	230 V AC, 50 Hz, 220-240V, (1430U)
Power consumption	60W
Operating temperature	5°C to 40°C (41°F to 104°F)
Storang temperature	-20°C to 60°C (-4°F to 140°F)
Dimensions	Approx. 391 x 409 x 443 mm (w / h / d) (15 1/2 x 16 1/8 x 17 1/2 inches)
Mass	Approx. 15 kg (33 lb 1 oz)
Accessories supplied	Remote Commander (1) R6 (size AA) batteries (2) Aerial connector (1) Dipole aerial (1)

Design and specifications are subject to change without notice.

Note

This appliance conforms with the EU Directive 89 / 336 / EEC regarding interference suppression.

RECEIVABLE CHANNELS

ITEM MODEL	Television System	Channel Coverage	Color System
KV-V1430A	B / G	E2 to E12 E21 to E69	PAL / SECAM / NTSC 4.43
KV-V1430B	B / G / H, L	E2 to E12 E21 to E69 A-H, S1 to S41 S01 to S05	PAL / SECAM / NTSC 4.43
KV-V1430D	B / G	E2 to E12 E21 to E69 A-H, S1 to S41 S01 to S05	PAL / NTSC 4.43
KV-V1430E	B / G	E2 to E12 E21 to E69 S01 to S41	PAL / NTSC 4.43
KV-V1430K	B / G, D / K	B / G: E2 to E12, E21 to E69, S01 to S05, S1 to S41 DK: R1 to R12, R21 to R60, S01 to S05, S1 to S41	PAL / SECAM / NTSC 4.43
KV-V1430U	I	E2 to E12 E21 to E69 A-H, S01 to S05	PAL / NTSC 4.43

TABLE OF CONTENTS

Section	Title	Page
TV SECTION		
1. GENERAL		
	Step 1-Preparation	4
	Step 2-Connecting the Aerial	4
	Step 3-Tuning in to TV Stations	5
	Step 4-Setting the Clock	8
	Watching the TV	8
	Playing a Tape	10
	Recording TV Programmes	12
	Recording TV Programmes Using the Timer	12
	Switching off Automatically-Sleep Timer	16
	Switching on at Your Desired Time-On Timer	16
	Enhancing Video Picture Quality	17
	Connecting Optional Equipment	18
	Index to Parts and Controls	18
2. DISASSEMBLY		
2-1.	Rear Cover Removal	20
2-2.	Chassis Assy Removal	20
2-3.	A Board Removal	20
2-4.	Service Position	20
2-5.	Picture Tube Removal	21
3. SET-UP ADJUSTMENTS		
3-1.	Beam Landing	22
3-2.	Convergence	23
3-3.	Screen (G2), Drive, White Balance, Sub Color and Sub Brightness	25
3-4.	Focus	25
4. CIRCUIT ADJUSTMENTS		
4-1.	Electrical Adjustments	26
5. DIAGRAMS		
5-1.	Block Diagram	29
5-2.	Circuit Boards Location	32
5-3.	Printed Wiring Boards and Schamatic Diagrams	32
	• A Board	35
	• H1 Board	39
	• C Board	39
	• H2 Board	40
VIDEO SECTION		
1. GENERAL		44
2. CIRCUIT ADJUSTMENTS		45
3. INTERFACE IC PIN FUNCTION DESCRIPTION		48
4. DIAGRAMS		54
5. EXPLODED VIEWS		66
6. ELECTRICAL PARTS LIST		72

SAFETY CHECK-OUT

After correcting the original service problem, perfom the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recom mend their replacement.
5. Check the B+ voltage to see it is at the values specified.

(CAUTION)
SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!
AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESECOMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFEOPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

(ATTENTION)
APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURTCIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!
AFIN D'EVITER TOUT RISQUE DELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DEPANNAGE.
LE CHÁSSIS DE CE RECEPTEUR EST DIRECTEMENT RACCORDÉ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS ÁLA SÉCURITÉ!!
LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MAPQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES CONT D'UNEIMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SECTION1
GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

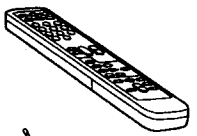
Getting Started

Step 1 — Preparation

Checking the Supplied Accessories

When you have taken everything out of the carton, check that you have these items:

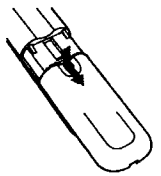
- Remote Commander
- Two R6 (size AA) batteries
- Dipole aerial (KV-V1430D only)
- Aerial connector (KV-V1430D only)



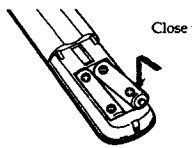
(KV-V1430D only)

(KV-V1430D only)

Inserting Batteries into the Remote Commander



Turn the Commander over, and remove the cover.



Close the cover.

Check the polarities and position two R6 batteries correctly.

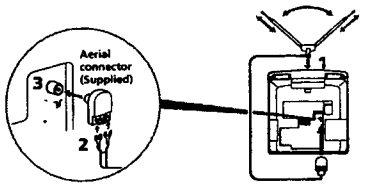
Step 2 — Connecting the Aerial

Connecting an Indoor Aerial (KV-V1430D only)

If your local VHF/UHF signal is strong, an indoor aerial can be used to obtain a clear picture. Connect the supplied dipole aerial as follows.

1 Insert the aerial until it clicks.
2 Loosen the screws of the connector, insert the lugs of the aerial and tighten the screws.
3 Connect to the Y (aerial) socket.

After you've turned on the video TV, adjust the aerial for best reception.

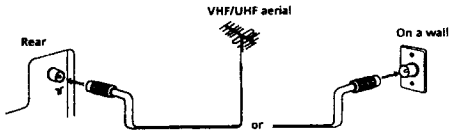


Connecting an Outdoor Aerial

For better TV reception and recording with clear video picture, connect an outdoor aerial to your video TV.

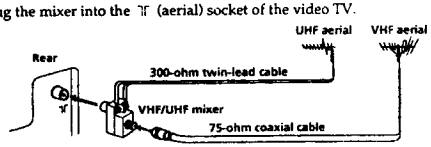
To connect a VHF aerial or a combination VHF/UHF aerial—75-ohm coaxial cable (round)

Attach an IEC aerial connector to 75-ohm coaxial cable.
Plug the connector into the Y (aerial) socket of the video TV.



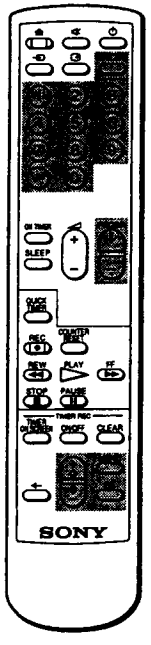
To connect both VHF and UHF aerials

Attach the aerial cable ends to the VHF/UHF mixer (not supplied).
Plug the mixer into the Y (aerial) socket of the video TV.



After connecting the aerial, connect the mains lead to a wall outlet.

Step 3 — Tuning in to TV Stations



You should preset the channels (up to 60 channels) by choosing either the automatic or manual method.
The automatic method is easier if you want to preset all receivable channels at once. Use the manual method if you want to allocate programme numbers to the channels one by one.

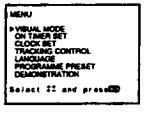
Before you begin

- If the ⏻ lamp on the video TV is lit in red, press ▭, PROGR +/– or a number button on the Remote Commander.

Selecting the Language on the Menu

You can select one of several languages for the menu and on-screen information.
The initial setting is English.

1 Press MENU.
The main menu appears.



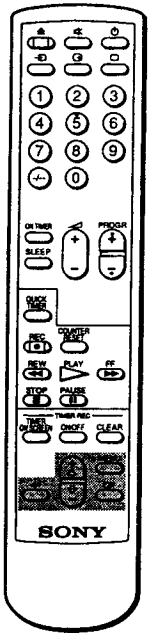
2 Move the cursor (▶) to "LANGUAGE" with + ◊ or – ◊ and press OK.
The LANGUAGE menu appears.

3 Select the language you want with + ◊ or – ◊ and press OK.
The selected language is coloured green, and the menu appears in the selected language.

4 Press MENU to go back to the original screen.

Note on the DEMONSTRATION function

If you choose "DEMONSTRATION" on the main menu and press OK, you can see a sequential demonstration on the menu functions on the screen. Press any button (e.g. MENU) to stop this function.



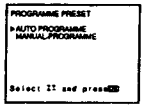
To stop automatic channel presetting

Press ⇦ on the Remote Commander.

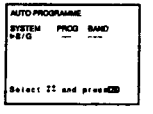
Presetting Channels Automatically

1 Press MENU to display the main menu.

2 Move the cursor (▶) to "PROGRAMME PRESET" with + ◊ or – ◊ and press OK.
The PROGRAMME PRESET menu appears.

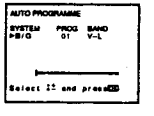


3 Move the cursor (▶) to "AUTO PROGRAMME" with + ◊ or – ◊ and press OK.
The AUTO PROGRAMME menu appears.

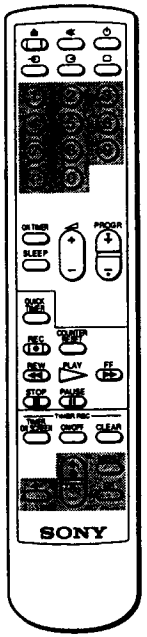


4 Press OK.
The programme number you previously watched appears in red in the "PROG" position.
Using + ◊ or – ◊, select the programme number from which you want to start presetting.

5 Press OK.
The tuning bar appears, and the video TV starts scanning and presetting a receivable channel from programme number selected in step 4.
The band scanning by tuning bar is displayed in the "BAND" position.



The preset programme and channel numbers are displayed on the screen in sequence. When presetting is finished, the original screen appears. All available channels are now stored on successive number buttons.



For programme positions beyond 2

The display scrolls by pressing – ◊ repeatedly.

If you have made a mistake

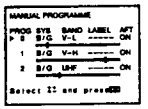
Press ← to go back to the previous position.

Presetting Channels Manually

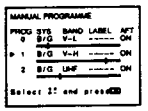
1 Press MENU to display the main menu.

2 Move the cursor (▶) to "PROGRAMME PRESET" with + ◊ or – ◊ and press OK.
The PROGRAMME PRESET menu appears.

3 Move the cursor (▶) to "MANUAL PROGRAMME" with + ◊ or – ◊ and press OK.
The MANUAL PROGRAMME menu appears.



4 Using + ◊ or – ◊, move the cursor (▶) to the programme position (number button) to which you want to preset the channel, and press OK.



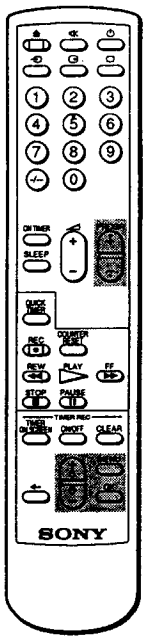
5 Press OK.
The BAND position turns red.

6 Select the band (V-L, V-H or UHF) you want to preset with + ◊ or – ◊, and press OK repeatedly until the tuning bar turns red.

7 Press + ◊ (up) or – ◊ (down).
The tuning bar turns green and starts scanning receivable channels. When the receivable channel is found, the tuning bar stops. If you want to prese this channel, press OK. If not, press + ◊ or – ◊ again to search for another band.

8 Repeat steps 4 to 7 to preset other channels.

9 After you finish presetting, press MENU to go back to the original screen.



For programme positions beyond 2

The display scrolls by pressing – ◊ repeatedly.

Skipping Programme Positions

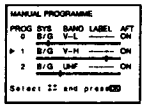
You can skip unused programme positions when selecting programme with PROGR +/– buttons. However, the skipped programmes may still be called up when you select them with the number buttons.

1 Press MENU to display the main menu.

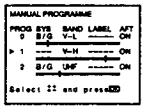
2 Move the cursor (▶) to "PROGRAMME PRESET" with + ◊ or – ◊ and press OK.
The PROGRAMME PRESET menu appears.

3 Move the cursor (▶) to "MANUAL PROGRAMME" with + ◊ or – ◊ and press OK.
The MANUAL PROGRAMME menu appears.

4 Using + ◊ or – ◊, move the cursor (▶) to the programme position which you want to skip and press OK.
The "SYS" position turns red.



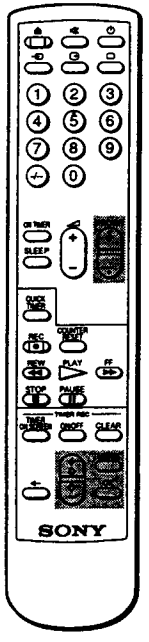
5 Press + ◊ or – ◊ until "---" appears in the "SYS" position and press OK.



When you select programmes using the PROGR +/– buttons, the programme position is skipped.

6 Repeat steps 4 and 5 to skip other programme positions.

7 Press MENU to go back to the original screen.



If you have made a mistake

Press ⇐ to go back to the previous position.

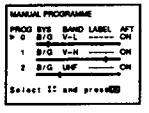
Captioning a TV Station Name

You can name a channel using up to five characters (letters or numbers) to be displayed on the TV screen (e.g. MTV). Using this function, you can easily identify which channel you are watching.

1 Press MENU to display the main menu.

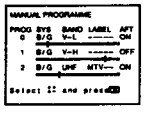
2 Move the cursor (▶) to "PROGRAMME PRESET" with + ◊ or – ◊ and press OK.
The PROGRAMME PRESET menu appears.

3 Move the cursor (▶) to "MANUAL PROGRAMME" with + ◊ or – ◊ and press OK.
The MANUAL PROGRAMME menu appears.



4 Using + ◊ or – ◊, move the cursor (▶) to the programme position you want to caption and press OK repeatedly until the first element of the "LABEL" position turns red.

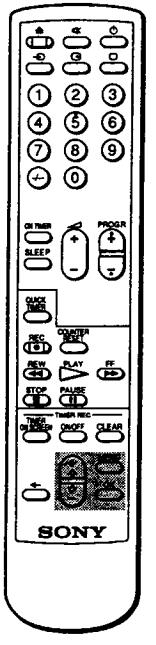
5 Select a letter or number with + ◊ or – ◊ and press OK.
The next element turns red. Select other characters in the same way. For the element you want to leave blank, select "-" and press OK.



6 After selecting all the characters, press OK repeatedly until the cursor appears. Now the caption you chose is stored.

7 Repeat steps 4 to 6 to caption other channels.

8 Press MENU to go back to the original screen.



To reactivate automatic fine-tuning (AFT)

Repeat from the beginning and select "ON" in step 5.

Manual Fine-Tuning

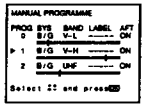
Normally, the automatic fine-tuning (AFT) is already working. However, if the picture of a programme is distorted, you can use the manual fine-tuning function to obtain better picture reception.

1 Press MENU to display the main menu.

2 Move the cursor (▶) to "PROGRAMME PRESET" with + ◊ or – ◊ and press OK.
The PROGRAMME PRESET menu appears.

3 Move the cursor (▶) to "MANUAL PROGRAMME" with + ◊ or – ◊ and press OK.
The MANUAL PROGRAMME menu appears.

4 Using + ◊ or – ◊, move the cursor (▶) to the programme position which you want to manually fine-tune.



5 Press OK repeatedly until the AFT position turns red, then press + ◊ or – ◊ to select OFF.

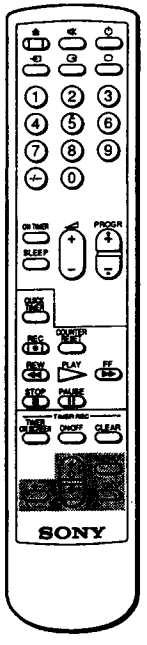
6 Press OK.
The tuning bar turns red.
While holding down + ◊ or – ◊, the tuning bar flashes red and green by turns, and the channel is fine-tuned. When the best TV reception is found, release + ◊ or – ◊.

7 Press OK.
The cursor (▶) appears. Now the fine-tuned level is stored.

8 Repeat steps 4 to 7 to fine-tune other channels.

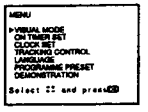
9 Press MENU to go back to the original screen.

Step 4 — Setting the Clock

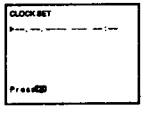


You need to set the clock for using timer recording and quick-timer recording functions.

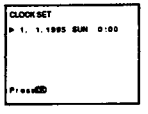
1 Press MENU to display the main menu.



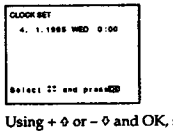
2 Move the cursor (▶) to "CLOCK SET" with + ◊ or – ◊ and press OK.
The CLOCK SET menu appears.



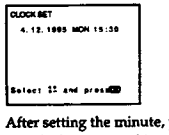
3 Press OK to start setting the clock.
The day section turns red.



4 Set the day with + ◊ or – ◊ and press OK.
The month section turns red.



5 Using + ◊ or – ◊ and OK, set the month, year, hour and minute in the same way as in step 4.



6 After setting the minute, press OK.
The clock starts working.

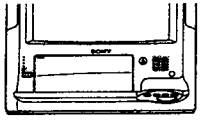
7 Press MENU to go back to the original screen.

If you have made a mistake
Press ⇐ to go back to the previous position.

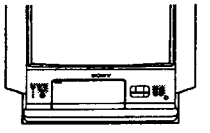
If power is interrupted or you disconnect the mains lead for more than one day
You have to re-set the clock.

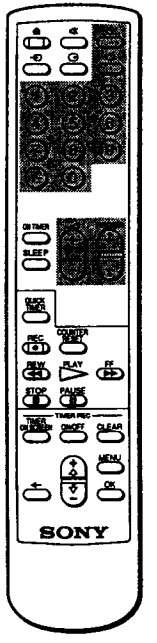
Watching the TV

KV-V1430D



KV-V2110D





This section explains the basic functions you use while watching the TV. Most of the operations can be done using the Remote Commander.

Switching the TV On and Off

Switching on

Press ⏻, PROGR +/– or number buttons on the Remote Commander, or PROGR+/– on the video TV.

Switching off

Press ⏻.
The video TV enters standby mode and the ⏻ lamp on the front of the video TV lights up in red.

To switch off the main power
Disconnect the mains lead from a wall outlet.

Selecting TV Programmes

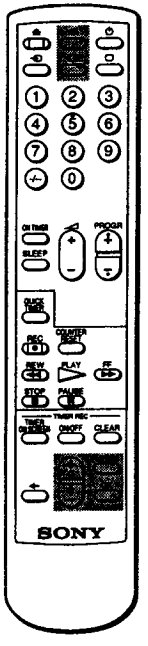
Press PROGR +/– or number buttons on the Remote Commander or PROGR +/– on the video TV.

To select a double-digit number using the number buttons

Press -/--, then the numbers.
For example, if you want to choose 14, press -/--, 1 and 4.

Adjusting the Volume

Press ◿ +/–.

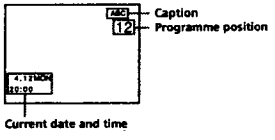


Muting the Sound

Press 🔇.
The 🔇 indicator appears and stays on the screen.
To resume normal sound, press 🔇 again or 🔊 +.

Displaying the On-screen Information

Press ⊕ to display the following on-screen information.
To have the programme number and caption stay on the screen, press ⊕ again.
To make the indications disappear, press ⊕ until no indications are displayed on the screen.



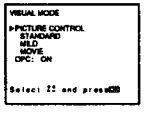
Adjusting the Picture

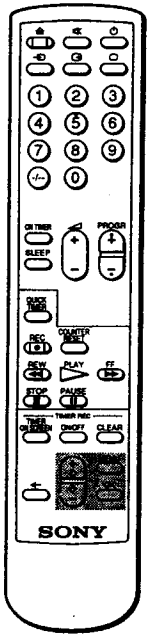
You can select one of four settings for picture effect in the menu. You can also adjust the picture to suit your own taste.

Selecting the picture effect

1 Press MENU to display the main menu.

2 Move the cursor (▶) to VISUAL MODE with + ◊ or – ◊ and press OK.
The VISUAL MODE menu appears.





Note
The HUE adjustment is available only for the NTSC colour system.

3 Using + ◊ or – ◊, select the setting you want and press OK. For the effect of each setting, see the table below.
The selected setting is stored.

Effect of each setting

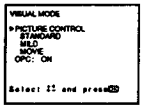
Setting	Picture effect
PICTURE CONTROL	The adjusted picture control levels are stored. (See "Adjusting the picture displayed on the screen.")
STANDARD	More contrast
MILD	Less contrast
MOVIE	Darker e.g. when watching a movie

4 Press MENU to go back to the original screen.

Adjusting the picture displayed on the screen

1 Press MENU to display the main menu.

2 Move the cursor (▶) to VISUAL MODE with + ◊ or – ◊ and press OK.
The VISUAL MODE menu appears.



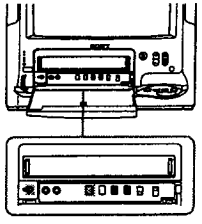
3 Move the cursor (▶) to PICTURE CONTROL with + ◊ or – ◊ and press OK.
The PICTURE CONTROL menu appears.

4 Using + ◊ or – ◊, select the item you want to adjust and press OK.

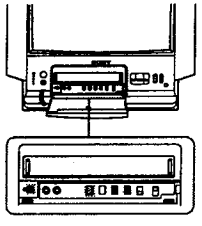
5 Adjust the picture with + ◊ or – ◊ and press OK.
With each press the vertical bars increase or decrease and the figure at the right margin changes to show the control level. (See the table on the next page.)

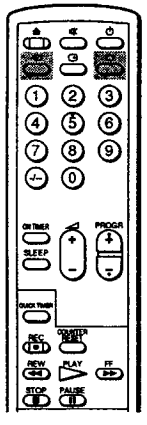
6 Repeat steps 4 and 5 to adjust other items.

KV-V1430D



KV-V2110D





7 Press MENU to go back to the original screen.
The adjusted control levels are stored.

Effect of each control

PICTURE CONTROL	Effect	
CONTRAST	Less	More
COLOUR	Less	More
BRIGHTNESS	Darker	Brighter
HUE	Greenish	Reddish
RESET	Resets all the items to the factory preset levels.	

Watching Line Input

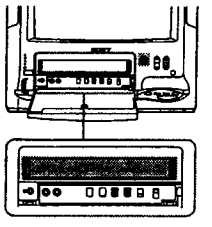
Press ⇦ repeatedly until the desired input indicator appears.
To go back to the normal TV picture, press ⇦ until the programme position appears or press ▢ on the Remote Commander once. For details of the video input picture, see page 31.

Listening with Headphones

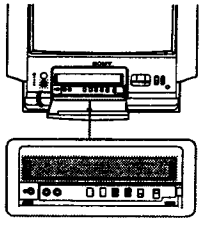
Plug the headphones (not supplied) to the ∩ (headphones) jack inside the front panel on the video TV.
The sound from the speaker is shut off.

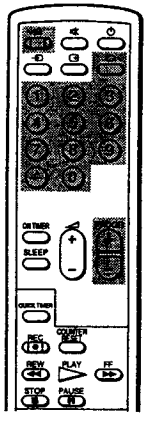
Playing a Tape

KV-V1430D



KV-V2110D





This section shows you how to insert a cassette and to play it. More convenient functions you can use while playing a tape is shown in "Additional Operations" from page 27.

Inserting a Video Cassette

1 Press ▢, PROGR +/– or number buttons on the Remote Commander, or PROGR +/– on the video TV.

2 Open the front panel on the video TV.

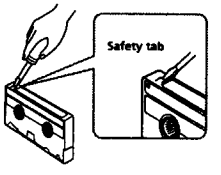
3 Gently press the centre of the front side of a cassette with the arrow indication facing upwards. The cassette is automatically loaded into the cassette compartment.
The ▭ indicator appears on the screen and stays until the cassette has been loaded.
The video TV turns on automatically when it is in standby mode. If you insert a cassette with its safety tab removed, playback starts.

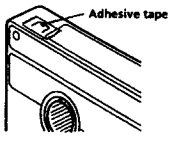
Ejecting a Video Cassette

Press EJECT ⏏ on the video TV or ⏏ on the Remote Commander.
The ▭ indicator appears and stays until the cassette is ejected.
You can eject the cassette even if the power is off.

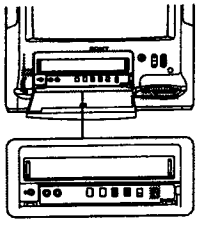
Protecting Your Cassette against Accidental Erasure

The cassette is provided with a safety tab to protect against accidentally erasing a previous recording. Break off the safety tab with a screw driver or a similar tool.
If the safety tab is removed, the cassette is ejected when you try to record on it.
To record on a cassette with the safety tab broken off, simply cover the tab hole with adhesive tape.

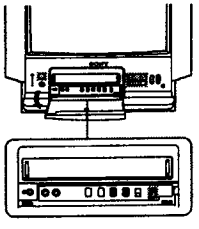


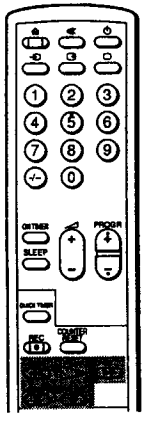


KV-V1430D



KV-V2110D





Playing a Tape

1 Press ⎔, PROGR +/– or number buttons on the Remote Commander, or PROGR +/– on the video TV when the ⏻ lamp is lit in red.

2 Insert a cassette.
If you insert a cassette with its safety tab removed, playback starts automatically.

3 Set the COLOUR SYSTEM switch to conform to the colour system of the tape to be played. Normally, set it to AUTO. If streaks appear when playing a tape, switch it to select the colour system.
PAL: to play a tape recorded in PAL colour system
NTSC: to play a tape recorded in NTSC colour system

4 Press PLAY ▷.
Playback starts. On-screen information is displayed for some seconds.

To stop playback
Press STOP ■.
The video TV goes back to the normal TV picture.

To stop playback for a moment
Press PAUSE ⏸. The picture pauses.
Press PAUSE ⏸ again or press PLAY ▷ to resume playback.
If you leave your video TV in pause mode, normal playback resumes after about 5 minutes to protect the quality of video tapes.

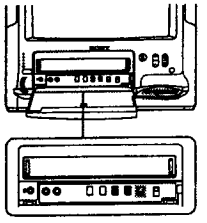
To fast forward the tape
Press STOP ■, then press FF ▶▶.

To rewind the tape
Press STOP ■, then press REW ◀◀.

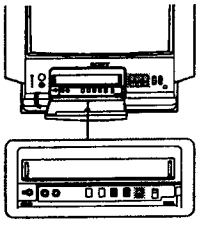
To search a tape at high speed
During playback, press and hold REW ◀◀ (rewind) or FF ▶▶ (fast forward).
A high-speed picture appears on the TV screen.
To resume normal playback, release the button.

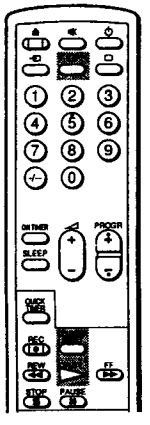
To view the picture in fast forward or rewind mode
Press and hold FF ▶▶ during fast forward or REW ◀◀ during rewind.
While you hold the button, you can view the picture.
When you release the button, fast forward or rewind mode is resumed.

KV-V1430D



KV-V2110D





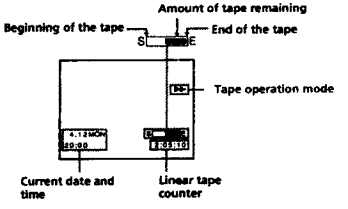
Note
The tape operation mode will be displayed whenever you change the mode (even when the ⎔ is turned off.)

Playing a Tape Repeatedly (Auto Repeat)

You can play the recorded portion of the tape repeatedly.
Set the AUTO REPEAT switch on the video TV to ON, and press PLAY ▷.
Playback starts. When the tape reaches the end, the video TV rewinds the tape to the beginning, then plays it.

Displaying the on-Screen Indications

Press ⎔ to display the following on-screen information. To show only the amount of tape remaining and linear tape counter on the screen, press ⎔ again.
To make the indications disappear, press ⎔ until no indications appear.

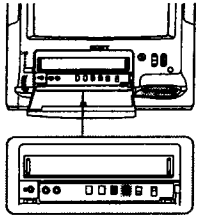


Resetting the Tape Counter

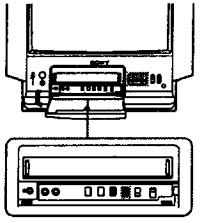
The tape counter helps you to locate a certain scene after playback. Press COUNTER RESET on the Remote Commander to set the counter to "0:00:00" before playing the tape. The tape counter is automatically reset to "0:00:00" whenever a cassette is inserted. The video TV keeps counting the length of the tape being played. Note, however, that the tape counter does not count the portions without video signals recorded.

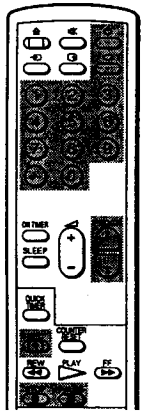
Recording TV Programmes

KV-V1430D



KV-V2110D





Recording TV Programmes

1 Press ▭, PROGR +/– or number buttons on the Remote Commander, or PROGR +/– on the video TV when the ⏻ lamp is lit in red.

2 Insert a cassette with a safety tab.

3 Select the programme position with PROGR+/–. You can also use number buttons on the Remote Commander. For double-digit numbers (e.g.14), first press -/--, then press 1 and 4.

4 Press REC ●.
The REC lamp on the front of the video TV lights up and recording begins.

To stop recording

Press STOP ■.
When the tape reaches the end, the video TV rewinds the tape automatically to the beginning, then stops. This function does not work when the power of the video TV is off.

To pause recording

Press PAUSE ❚❚.
To resume recording, press PAUSE ❚❚ again.

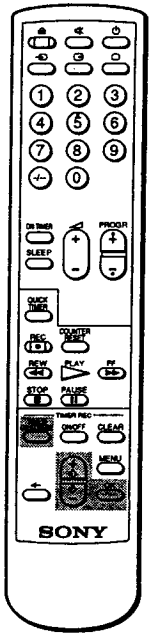
You can cut out an unwanted scene during recording with this button.
1 Press PAUSE ❚❚ when an unwanted scene appears on the screen. Recording pauses.
2 Press PAUSE ❚❚ again to release the pause mode at the desired scene. Recording resumes from the point set in step 1.

When the recording pause mode lasts for about 5 minutes, the video TV stops recording to protect the quality of video tapes.

Recording with the TV Off

Press ⏻.
The TV screen is turned off and the ⏻ lamp lights up.
The video TV continues recording.

Recording TV Programmes Using the Timer



The Timer Recording function allows you to preset your video TV to record up to six programmes within a one-month period.

Before you begin
- Press ▭, PROGR +/– or number buttons on the Remote Commander, or PROGR +/– on the video TV to switch on the video TV.
- Make sure that the time and date clock are set. If not, the message "Please set the clock" is displayed on the screen. Refer to "Setting the clock" on page 12.
- Make sure that the loaded cassette has its safety tab. If a cassette without safety tab is loaded, the message "Tape with safety tab is required for recording" is displayed.

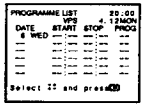
Setting the Timer

Example: Here is how to record a programme broadcast on programme position 26 from 20:15 to 21:55 on Wednesday, 6th December 1995.

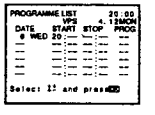
1 Press TIMER ON SCREEN.
The PROGRAMME LIST appears.

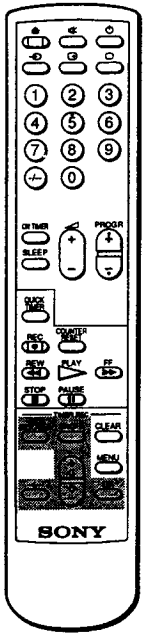
2 Press OK.
Today's date coloured red appears.

3 Press + ◊ until "6 WED" appears.
For daily and weekly recording see "Daily/weekly recording" on page 23.

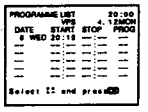


4 Press OK, then set the hour of the recording start time to "20" with + ◊ or –◊.

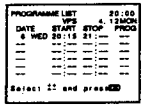




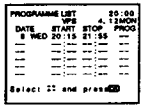
5 Press OK, then set the minute of the recording start time to "15" with + ◊ or – ◊.



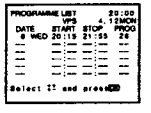
6 Press OK, then set the hour of the recording stop time to "21" with + ◊ or – ◊.



7 Press OK, then set the minute of the recording stop time to "55" with + ◊ or – ◊.



8 Press OK, then set the programme position to "26" with + ◊ or – ◊.



9 Press OK.
The cursor (▶) appears at the left margin.

10 When you want to set other programmes, press – ◊ to move down the cursor to the next line, then repeat steps 2 to 9.

11 Press TIMER REC ON/OFF.
The TIMER REC lamp on the front of the video TV lights up and the video TV enters timer recording standby mode.

Press TIMER ON SCREEN to erase the PROGRAMME LIST.
Turn off the video TV if you do not want to watch the TV.
The video TV turns on automatically and starts recording at the preset start time, and goes off at the preset stop time.

If you have made a mistake during timer setting

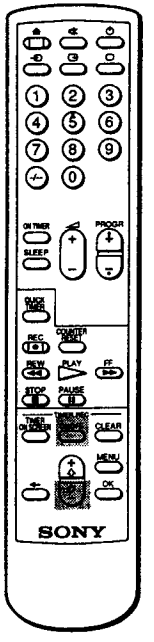
Press ← to go back to the previous position and correct the setting.

If you try to enter the recording start time prior to the current time

All the items of the setting will be erased.

If you try to do incorrect operation

The video TV displays a message on the screen to interrupt your setting.



Daily/weekly recording

You can preset your video TV to record the same programme every day of the week (daily recording) or the same programme on the same day every week (weekly recording). Press – ◊ in step 3 until the desired setting appears in the "DATE" position. With each press, the setting changes as follows:

4 (today) → MON–SUN → MON–SAT → MON–FRI → EVERY SAT → EVERY FRI → EVERY THU → EVERY WED → EVERY TUE → EVERY MON → EVERY SUN → 3 (next month) → 2.....

To stop timer recording

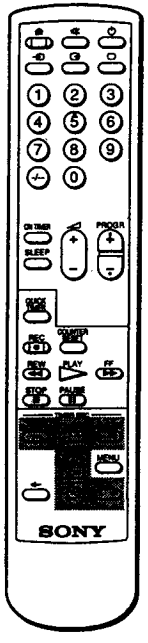
Press TIMER REC ON/OFF.
The TIMER REC lamp turns off.

Using the Video TV before Timer Recording Starts

You can watch a TV programme, check the timer settings and reset the counter in timer recording standby mode. However, press TIMER REC ON/OFF to turn off the TIMER REC lamp on the front of the video TV to do the following operations:

- ejecting the cassette
- using the tape operation buttons
- changing or cancelling the timer settings

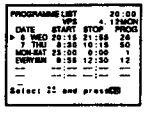
Remember to press TIMER REC ON/OFF again to make the TIMER REC lamp light after the above operations.



Checking the Timer Settings

You can display the list of the timer settings which you preset.

Press TIMER ON SCREEN.
The PROGRAMME LIST appears.



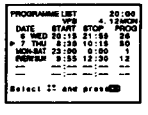
Press TIMER ON SCREEN again to erase the PROGRAMME LIST.

Changing or Canceling the Timer Settings

1 Press TIMER REC ON/OFF to turn off the TIMER REC lamp on the front of the video TV.

2 Press TIMER ON SCREEN to display the PROGRAMME LIST.

3 Select the setting you want to change or cancel with + ◇ or – ◇.

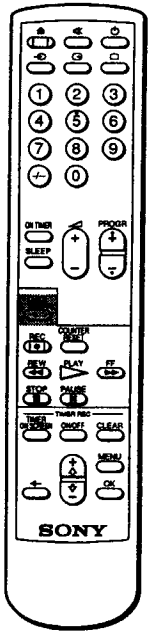


4 **To change the setting**
Using + ◇ or – ◇ and OK, re-enter all the items.
Refer to "Setting the timer" steps 2 to 9 on pages 21 and 22.

To cancel the setting
Press TIMER REC CLEAR.

5 Press TIMER ON SCREEN to go back to the original screen.

6 If there are other timer settings on the list, press TIMER REC ON/OFF to set the video TV to timer recording standby mode.



Recording Using the Quick-Timer

You can preset your video TV to start timer recording immediately and to automatically stop recording after a specific time period.
If you have not set the clock, quick-timer recording cannot be done.

If you are recording

1 Press QUICK TIMER on the Remote Commander.
The "QUICK TIMER 0:00" appears on the screen.

2 Press QUICK TIMER repeatedly to select the recording time period. With each press, the time period changes as follows:

0:00 → 0:30 → 1:00 → .... → 3:30 → 4:00

Even if you switch off the video TV, it continues recording. After the selected time period has elapsed, recording stops automatically.

If you are not recording

1 Press ⏻, PROGR +/– or number buttons on the Remote Commander, or PROGR +/– on the video TV to switch it on.

2 Insert a cassette with its safety tab.

3 Select the programme position which you want to record.

4 Press QUICK TIMER on the Remote Commander.
The "QUICK TIMER 0:00" appears on the screen.

5 Press QUICK TIMER repeatedly to select the recording time period. With each press the time period changes as follows:

0:00 → 0:30 → 1:00 → .... → 3:30 → 4:00

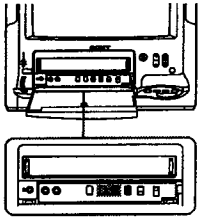
The time period turns yellow and recording starts.
Even if you switch off the video TV, it continues recording.
When the preset time period has elapsed, the video TV stops recording.

To change the recording time period after quick-timer recording begins
Press QUICK TIMER until the desired time period appears.

To display the remaining time period during quick-timer recording
Press ⏻. The recording time period decreases minute by minute.

To stop quick-timer recording
Press TIMER REC ON/OFF.

KV-V1430U only



Timer Recording with PDC Signals

The German broadcasting system transmits PDC (Programme Delivery Control) signals with the TV programmes. These signals assure you that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions. For example, if an urgent news bulletin interrupts a regular programme, recording stops. As soon as the interrupted programme resumes, recording starts again.

1 If the TIMER REC lamp is lit on the front panel, press TIMER REC ON/OFF to turn it off.

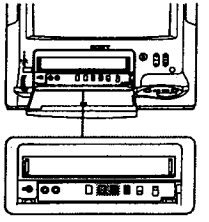
2 Before setting the timer, press PDC on the inside of the front panel so that the PDC lamp lights up.

3 Set the timer following the steps in "Setting the timer" (pages 21 and 22).

Notes on PDC recording

- If you use PDC recording while watching the TV, the programme automatically changes to the timer recording programme and you cannot change programmes. Make sure to use PDC recording only when the video/TV set is in standby mode or in power switch off mode. If you watch the TV continuously, cancel the PDC timer recording.
- If recording times overlap due to a PDC time shift, the programme that was broadcast first has priority. Recording of the second programme begins when the first programme has finished.
- If the video TV could not receive a PDC signal because it was too weak or because the station failed to transmit PDC signals, timer recording is made without the PDC function.

KV-V1430D only



Timer Recording with VPS Signals

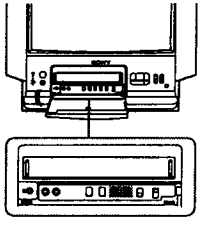
The German broadcasting system transmits VPS (Video Programme System) signals with the TV programmes. These signals assure you that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions. For example, if an urgent news bulletin interrupts a regular programme, recording stops. As soon as the interrupted programme resumes, recording starts again.

1 If the TIMER REC lamp is lit on the front panel, press TIMER REC ON/OFF to turn it off.

2 Before setting the timer, press VPS on the inside of the front panel so that the VPS lamp lights up.

3 Set the timer following the steps in "Setting the timer" (pages 21 and 22).

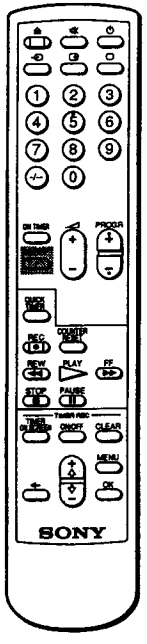
KV-V2110D



Notes on VPS recording

- If you use VPS recording while watching the TV, the programme automatically changes to the timer recording programme and you cannot change programmes. Make sure to use VPS recording only when the video/TV set is in standby mode or in power switch off mode. If you watch the TV continuously, cancel the VPS timer recording.
- If recording times overlap due to a VPS time shift, the programme that was broadcast first has priority. Recording of the second programme begins when the first programme has finished.
- If the video TV could not receive a VPS signal because it was too weak or because the station failed to transmit VPS signals, timer recording is made without the VPS function.

Switching off Automatically — Sleep Timer



You can automatically switches the video TV into standby mode after a selected time period.

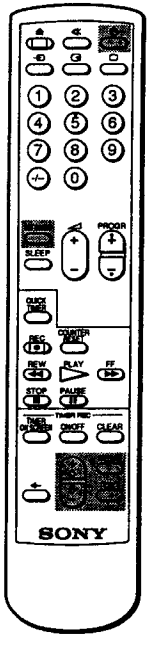
Press SLEEP.
With each press, the time period (in minutes) changes as follows:

OFF → 30 → 60 → 90

One minute before the TV switches into standby mode, a message "Good night" is displayed on the screen.

To cancel the timer
Press SLEEP to select "OFF".

Switching on at Your Desired Time — On Timer



To erase the message
Press any button on the video TV or Remote Commander.

You can preset your video TV to automatically switch on at a desired time. You can select the TV programme or video playback to be switched on.

1 Press MENU to display the main menu.

2 Move the cursor (▶) to "ON TIMER SET" with + ◊ or – ◊ and press OK.
The ON TIMER SET menu appears.

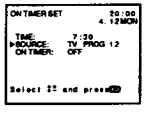
3 Press OK.
The timer setting hour section turns red.

4 Set the hour with + ◊ or – ◊ and press OK.
The minute section turns red.

5 Set the minutes (by one minute) with + ◊ or – ◊ and press OK.
The cursor appears beside "TIME."

6 Move the cursor (▶) to "SOURCE" with + ◊ or – ◊ and press OK.

7 Select TV or VCR (video playback) to be switched on with + ◊ or – ◊ and press OK.
When you select TV, select the programme position with + ◊ or – ◊ and press OK.



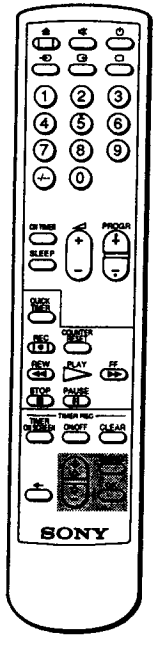
8 Move the cursor (▶) to "ON TIMER" with + ◊ or – ◊ and press OK, then select ON with + ◊ or – ◊ and press OK.

9 Press MENU to go back to the original screen.

10 Press ON TIMER.
The ON TIMER lamp on the front of the video TV lights up.
If you are not using the video TV, press ⏻ to set the video TV in standby mode.

At the preset time, the video TV automatically switches on and a message "Good morning" is displayed for five minutes.
If you do not press any button for 2 hours, the video TV automatically shuts off.

Enhancing Video Picture Quality



Adjusting the Tracking

Adjusting the Tracking Automatically

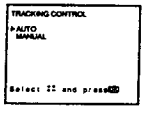
The tracking condition is automatically adjusted on this video TV. The AUTO TRACKING indicator will appear while the video TV is searching for best tracking condition.

Adjusting the Tracking Manually

If streaks or snow noise appear on the video playback picture, adjust the tracking condition manually.

1 Press MENU to display the main menu.

2 Move the cursor (▶) to "TRACKING CONTROL" with + ◊ or – ◊ and press OK.
The TRACKING CONTROL menu appears.



3 Select MANUAL with + ◊ or – ◊ and press OK.
The tracking meter appears.

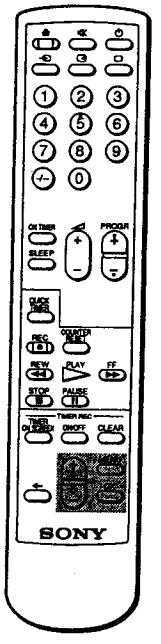
4 Using + ◊ or – ◊, adjust the tracking to get the best picture.

5 Press OK.
The main menu reappears.

6 Press MENU to go back to the original screen.

To go back to automatic tracking

Select AUTO in the TRACKING CONTROL menu with + ◊ or – ◊ and press OK.

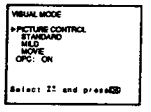


Adjusting with the Optimum Picture Control (OPC)

This function allows you to improve playback and recording quality by adjusting the system parameter automatically according to the condition of the video tape.
This function is set to ON at the factory. To maintain better picture quality, it is advisable to leave the function on. The OPC function works on all types of tapes, even on rental tapes.
To change the setting, use the menu display.

1 Press MENU to display the main menu.

2 Move the cursor (▶) to VISUAL MODE with + ◊ or – ◊ and press OK.
The VISUAL MODE menu appears.



3 Move the cursor (▶) to OPC with + ◊ or – ◊ and press OK.

4 Select ON or OFF with + ◊ or – ◊ and press OK.

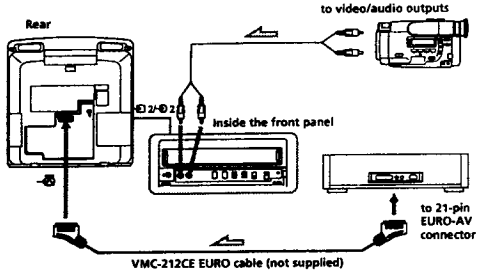
5 Press MENU to erase the main menu.

About the Auto Head Cleaner

The auto head cleaner built into this set automatically cleans the video heads when a cassette is loaded or unloaded. If the effect of head cleaning is not sufficient even after a cassette has been loaded/unloaded several times, clean the heads using the Sony V-25CL video head cleaning cassette. For details on head cleaning see page 34.

Connecting Optional Equipment

Watching the Picture Input from Optional Equipment



To watch the video input signal

Press repeatedly until the desired input indicator appears on the screen.

- 1 for audio/video input or RGB input through the connector
- 2 for audio/video input through the 2/2 jacks on the front

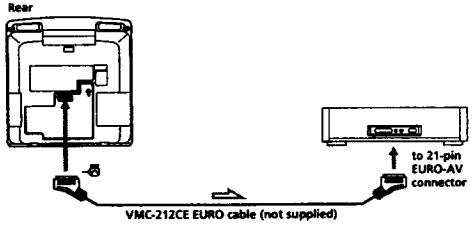
Editing with Another VCR

Using an additional VCR, you can edit a tape.

Editing from another VCR

Connections are the same as in "Watching the picture input from optional equipment."

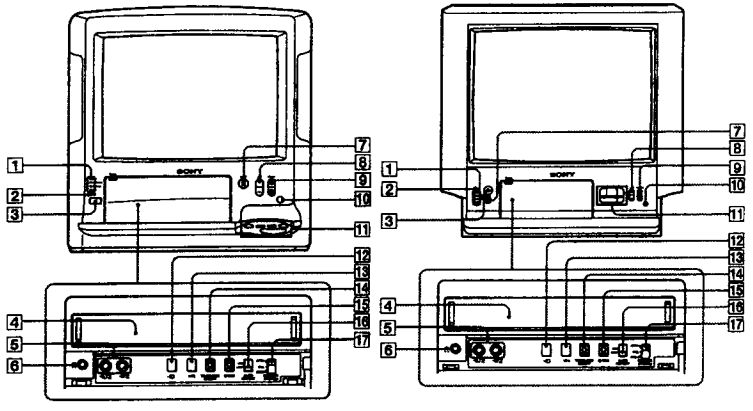
Editing onto another VCR



Index to Parts and Controls

Video TV Set—Front

This section briefly describes the buttons and controls on the video TV set and on the Remote Commander. For more information, refer to the pages next to each description.



[1] Lamps
REC(recording) (page 20)
TIMER REC(recording) (page 23)
ON TIMER (page 28)
VPS (page 26)

[2] ⏻ (standby) lamp (page 13)

[3] ⏻ (standby) button (page 13)

[4] Cassette compartment (page 17)

[5] 2/2 (video/audio input) jacks (page 31)

[6] 🎧 (headphones) jack (page 16)

[7] EJECT ⏏ button (page 17)

[8] (volume) +/– buttons (page 13)

[9] PROGR(programme) +/– buttons (page 13)

[10] Remote sensor

[11] Tape transport buttons (page 18)

[12] (input select) button (pages 16, 31)

[13] VPS button (page 26)

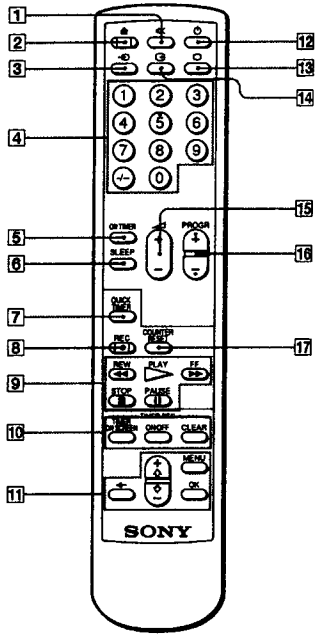
[14] TIMER REC ON/OFF button (pages 23, 24)

[15] REC(recording) ● button (page 20)

[16] AUTO REPEAT ON/OFF switch (page 19)

[17] COLOUR SYSTEM switch (page 18)

Remote Commander



1 (muting) button (page 14)

2 ⏏ (eject)button (page 17)

3 (input select) button (pages 16, 31)

4 Number button (page 6, 13)

5 ON TIMER button (page 28)

6 SLEEP button (page 27)

7 QUICK TIMER button (page 25)

8 REC (recording) ● button (page 20)

9 Tape transport buttons (page 18)
▷ PLAY, ■ STOP, ❚❚ PAUSE, ◀◀ REW (rewind), ▶▶ FF (fast forward)

10 TIMER REC buttons
TIMER ON SCREEN (pages 21, 24)
ON/OFF (pages 22, 24)
CLEAR (page 24)

11 Menu operation buttons (pages 6, 7)
MENU
+ ◇/– ◇
←
OK

12 ⏻ (standby) button (page 13)

13 ▭ (TV) button (pages 6, 13)

14 ⊙ (on-screen display) button (pages 14, 19)

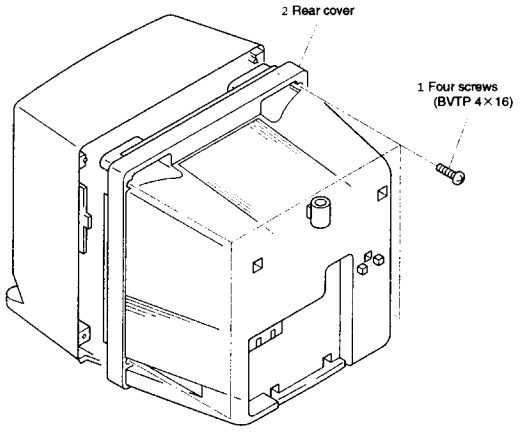
15 (volume) +/– buttons (page 13)

16 PROGR (programme) +/– buttons (page 13)

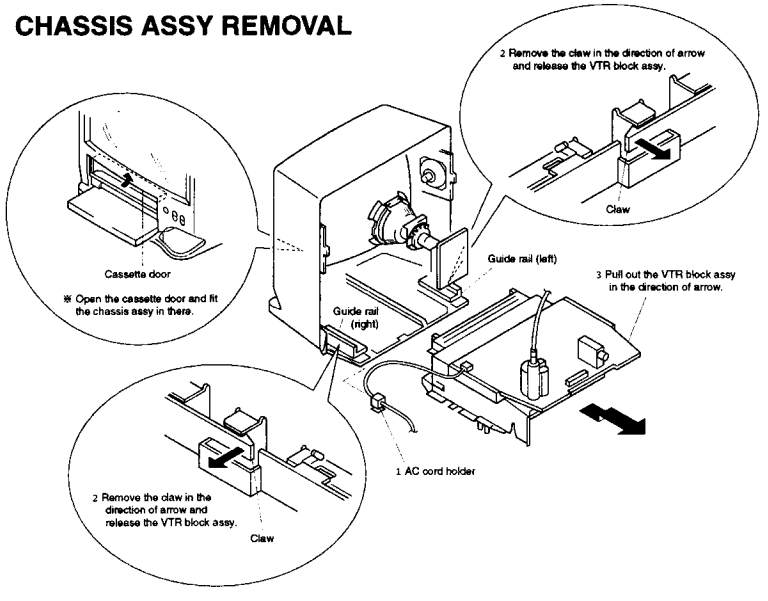
17 COUNTER RESET button (page 19)

SECTION 2
DISASSEMBLY

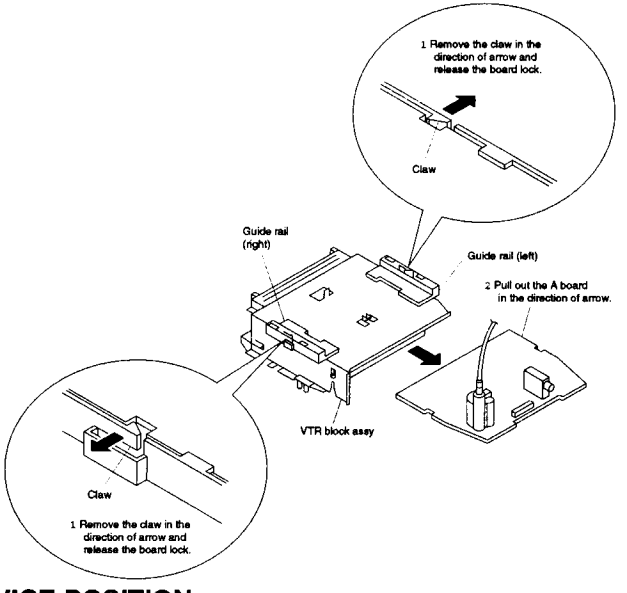
2-1. REAR COVER REMOVAL



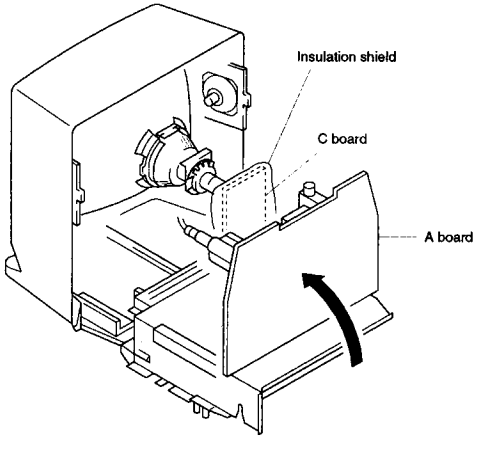
2-2. CHASSIS ASSY REMOVAL



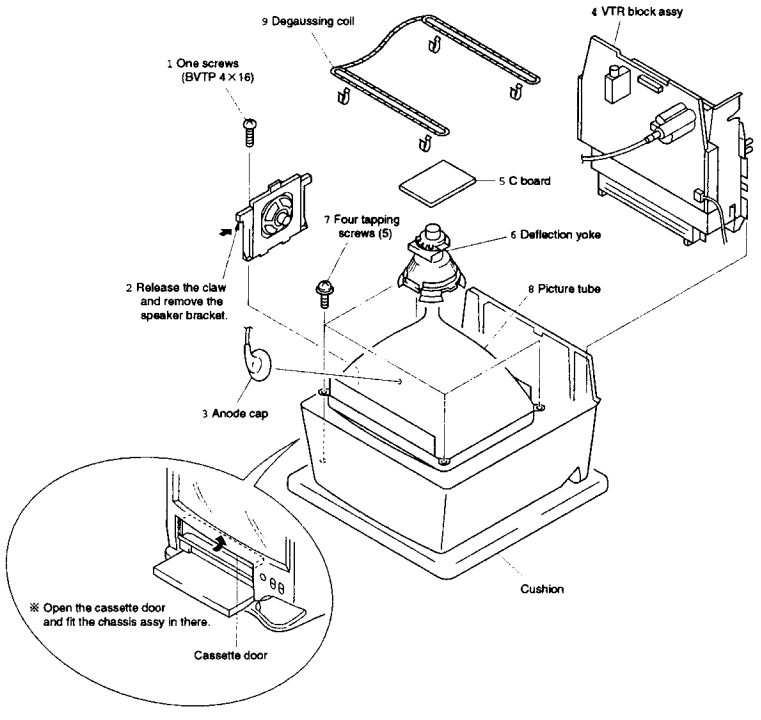
2-3. A BOARD REMOVAL



2-4. SERVICE POSITION



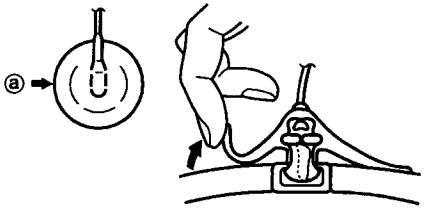
2-5. PICTUER TUBE REMOVAL



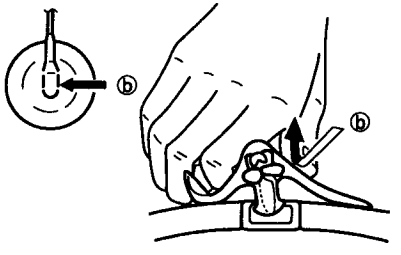
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis. CRT chield or carbon painted on the CRT, after removing the anode.

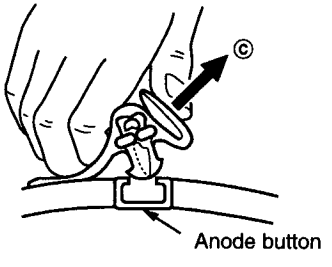
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



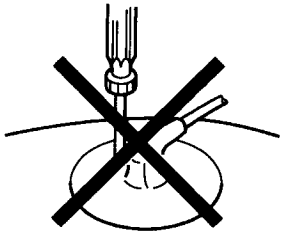
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be romoved by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

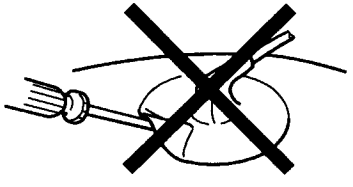
• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The Contrast and Brightness controls should be set as follows unless otherwise noted:

◑ CONTRAST control 80%
(or Normal by commander)
☼ BRIGHTNESS control .. 50%

Perform the adjustments in the following order:
1. Beam Landing
2. Convergence
3. Screen (G2), Drive, White Balance, Sub Color and Sub Brightness.
4. Focus

Note: Test Equipment Required.
1. Color bar/Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter
5. Oscilloscope

Preparation:
- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

3-1. BEAM LANDING

Demagnetize with a degausser.
1. Input an all white raster signal from the pattern generator.
   CONTRAST } normal
   BRIGHTNESS }
2. Switch the raster signal of the pattern generator to Red.
3. Move the deflection yoke backward, and adjust with the purity control so that Red is at the center and the Blue and Green are evenly spaced at the sides. see (Fig. 3-1 - 3-3)
4. Move the deflection yoke forward, and adjust so that the entire screen becomes Red. (Fig. 3-1)
5. Switch the raster signal to Blue and then Green to confirm the condition.
6. When the position of the deflection yoke has been determined, tighten it with the deflection yoke mounting screw.
7. When the landing at the corners is not correct, adjust by using disk magnets. (Fig. 3-4)

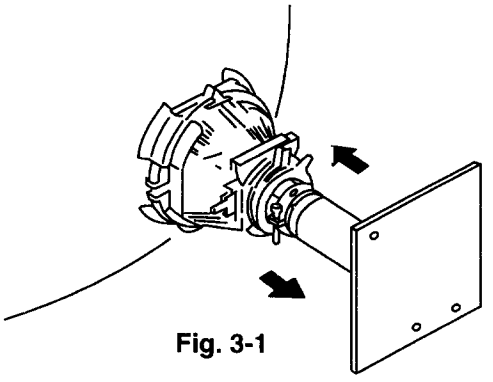


Fig. 3-1

Fig. 3-2

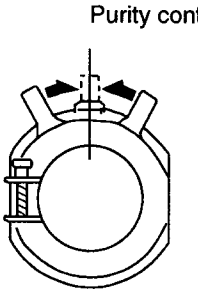


Fig. 3-3

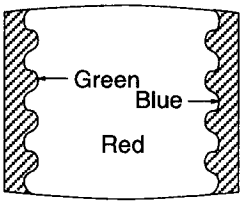
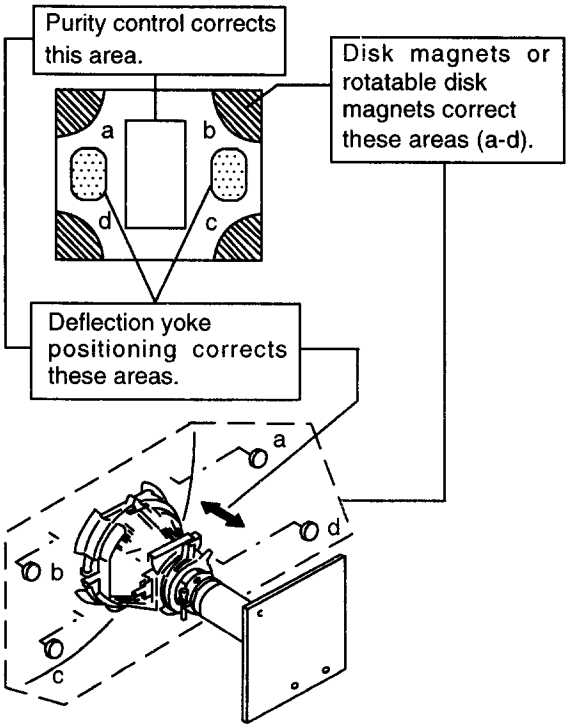


Fig. 3-4

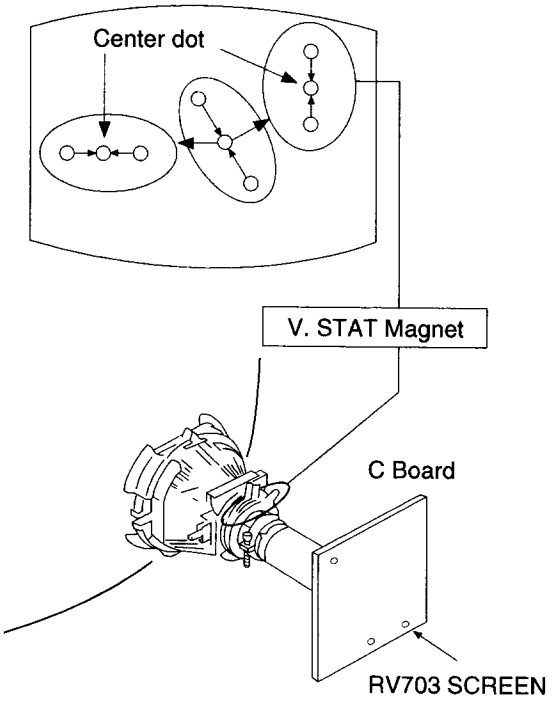


3-2. CONVERGENCE

Preparation:

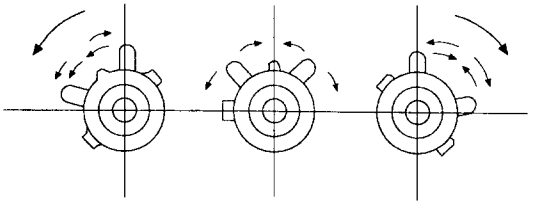
- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set the BRIGHTNESS control to minimum.
- Input a dot pattern from the pattern generator.

(1) Horizontal and Vertical Static Convergence

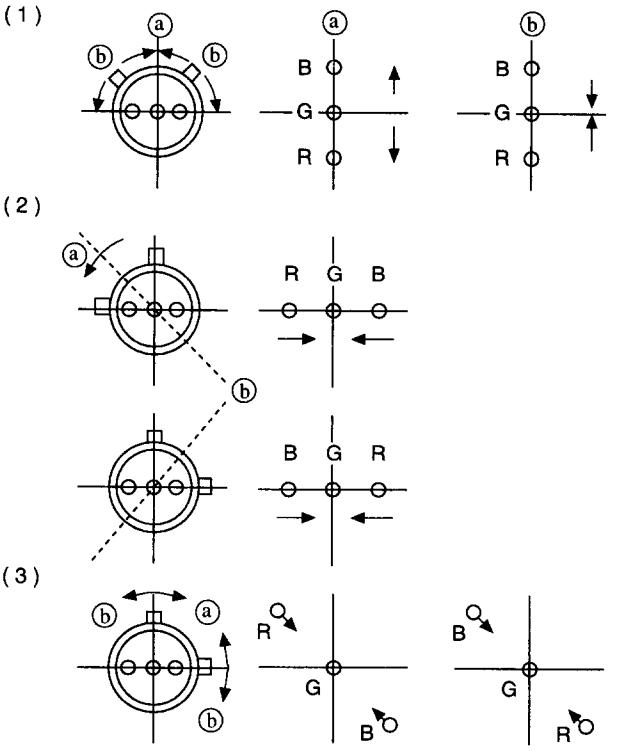


1. Adjust the V.STAT magnet to converge the Red, Green and Blue dots at the center of the screen. (Vertical and Horizontal movement)

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



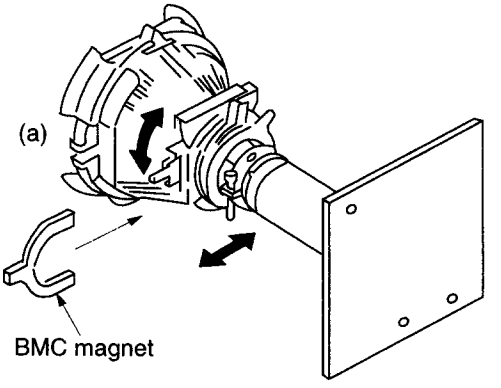
2. When the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue dots move as shown below.



If the Red and Blue dots do not converge with the Green dots, perform the following steps.

1. Move the BMC magnet (a) to correct for insufficient H.static convergence.
2. Rotate the BMC magnet (b) to correct for insufficient V.static convergence.

In either case, repeat the Beam Landing Adjustment.

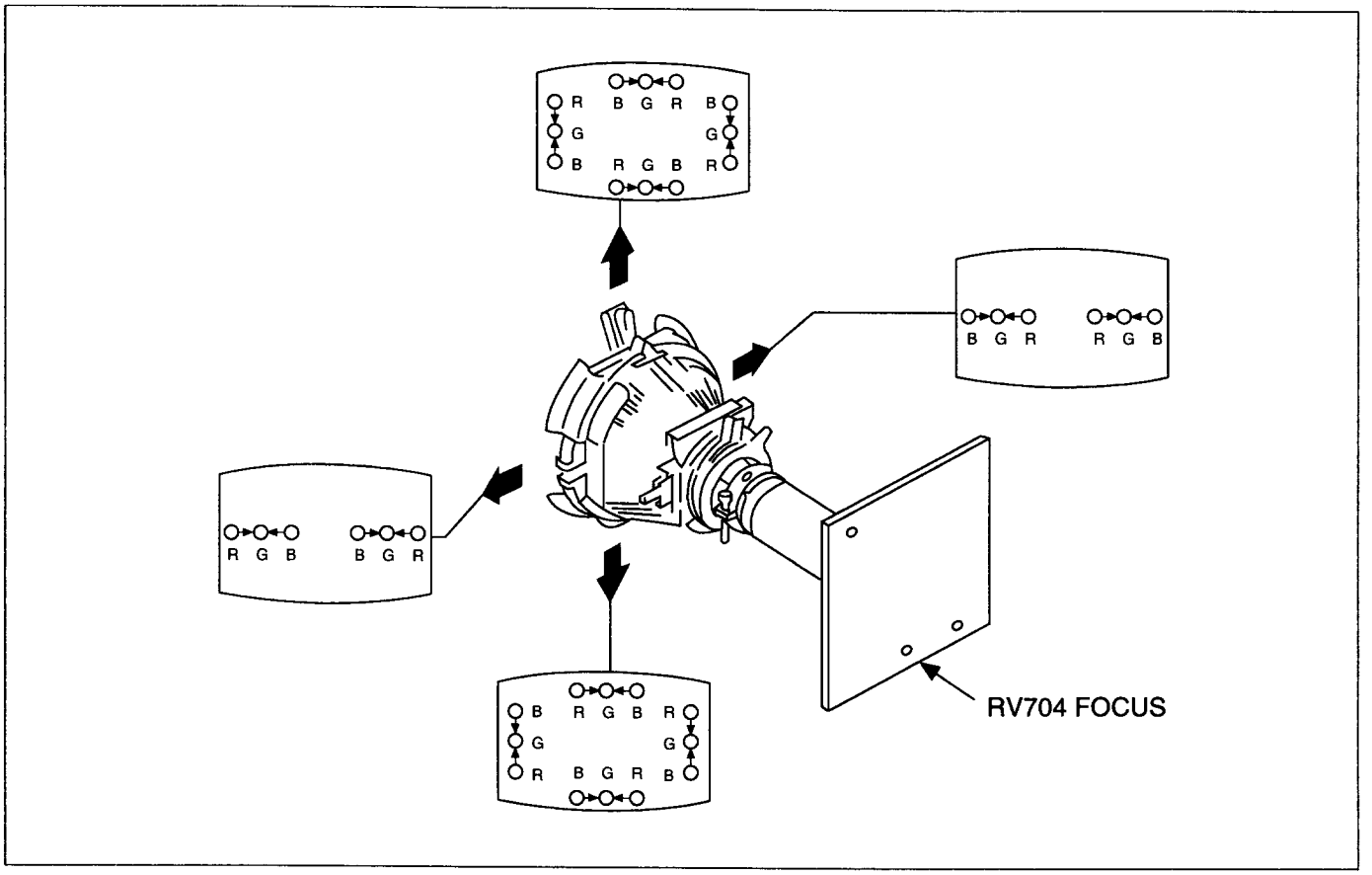


(2) Dynamic Convergence Adjustment

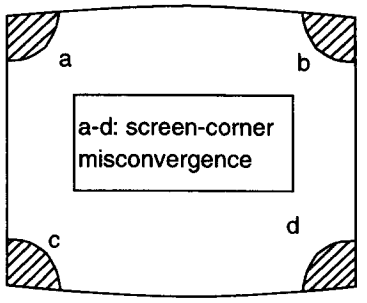
Preparation:

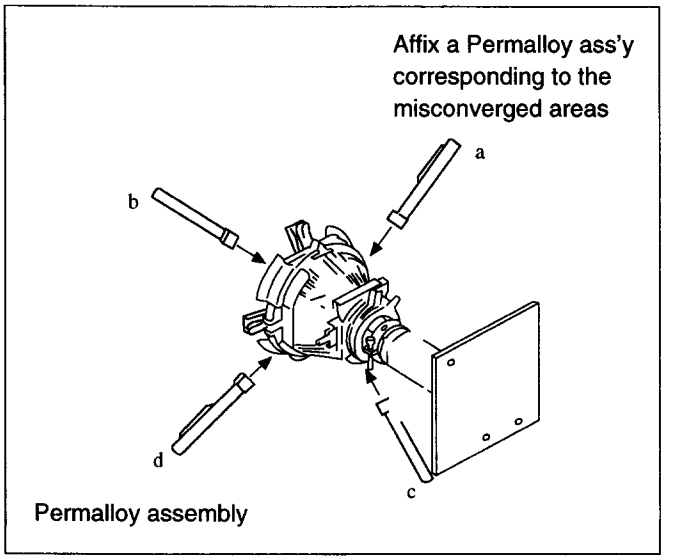
- Before starting to perform the Horizontal and Vertical static convergence adjustment.

1. Slightly loosen the deflection yoke screw.
2. Remove the deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

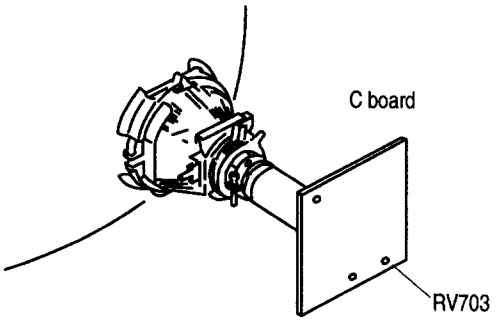


(3) Screen-corner Convergence.





3-3. SCREEN (G2), DRIVE WHITE BALANCE, SUB COLOR and SUB BRIGHTNESS.

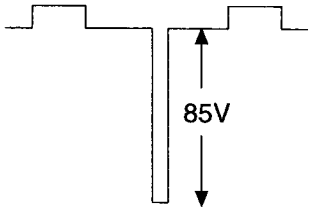


Screen (G2) setting

1. Input a 0 IRE (Black Level) signal from the pattern generator.
2. Enter into the Service Mode "ON SCREEN DIS" "DIGIT 5" "VOLUME +" "TV" then select " G2 " with " 1 " or " 4 " key.
3. Adjust RV703 until the Down arrow is displayed.
4. Adjust RV703 until the Down arrow just disappears.
5. Press the [TV] Button on the Remote Commander to store the data.

Drive Level

1. Input a Video signal containing a small area of 100% white on a black background.
2. Connect an oscilloscope to Pin (7) of J701 (R OUT) on the C Board.
3. Set the Picture to maximum.
4. Enter into the Service mode.
5. Using the "1" and "4" buttons select "RIN".
6. Using the "3" and "6" buttons on the Remote Commander adjust until the oscilloscope waveform has an amplitude of 85V.

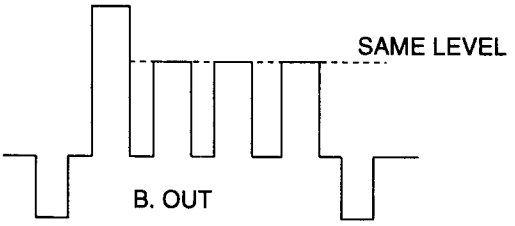


White Balance Adjustment

1. Input an all white pattern from the pattern generator.
2. Adjust the Color and Brightness controls to the standard level.
3. Enter into the Service Mode.
4. Adjust the "GIN" and "BIN" so that the White Balance becomes optimum.

Sub Color Adjustment

1. Input a PAL color bar pattern from the pattern generator.
2. Connect an oscilloscope to Pin (5) of J701 (B OUT) on the C Board.
3. Enter into the Service Mode "ON SCREEN DIS" "DIGIT 5" "VOLUME +" "TV" then select " G2 " with " 1 " or " 4 " key.
4. Using the "3" and "6" buttons on the Remote Commander adjust until the oscilloscope waveform becomes as follows :



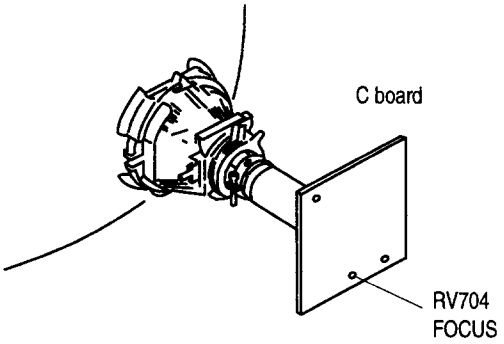
Note : If the TV is able to receive PAL and SECAM transmissions, repeat the above procedure using a SECAM color bar signal.

Sub Brightness Adjustment

1. Input a Philips pattern from the pattern generator.
2. Enter into the Service Mode "ON SCREEN DIS" "DIGIT 5" "VOLUME +" "TV" then select " G2 " with " 1 " or " 4 " key.
3. Using the "3" and "6" buttons on the Remote Commander adjust until the 0 IRE of the grey scale and the cut off are only slightly visible on the screen.
4. You must write all adjusted data in service mode as following procedure Push "X" then "0" by remote commander.

3-4. FOCUS

Adjust the FOCUS control RV704 so that the whole screen is in best focus.



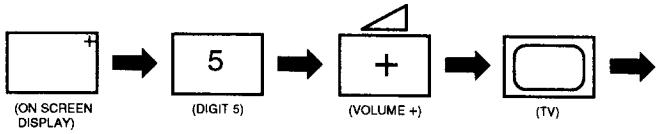
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied Remote Control Commander RM-863.

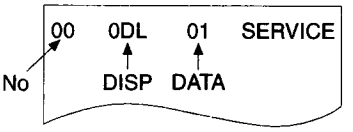
HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power of the set and enter into stand-by mode.
2. Press the following sequence of buttons on the Remote Control Commander.



"Service mode" will appear in the top right corner of the screen Other status information will also be displayed.

3. Press the "1" or "4" buttons to select the adjustment item from the table.
4. Press the "3" or "6" buttons to change the data as required.
5. Turn off the power to quit the service mode when adjustments are completed.



Range of adjustments available from the on screen menu system.

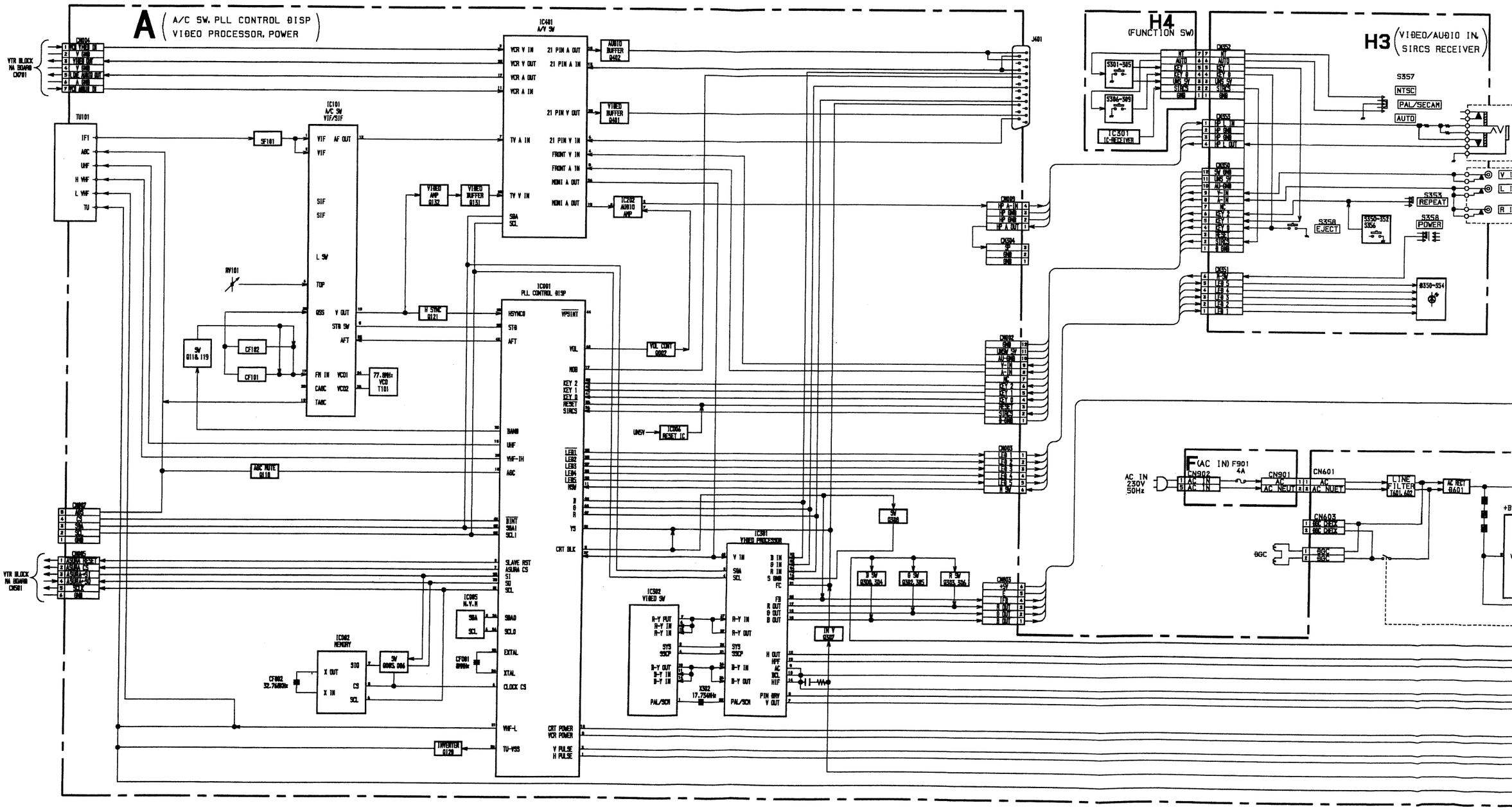
	No.	DISP	DATA (Range) (HEX)	DATA Standard (HEX)	Item	BIT
	00	ODL	00~FF	08	Power On Delay	0~7
	01	OSH	00~3F	02	On Screen H-posi.	0~5
*	02	MUT	00~01	00	FTZ Muting On	0
	03	VAM	00~3F	3B	V. SIZE	0~5
*	04	VBC	00~3F	14	V-Breath Correct.	0~5
*	05	PAM	00~3F	00	Parabola Amp.	0~5
*	06	PTI	00~3F	20	Parabola Tilt	0~5
	07	VLI	00~3F	1C	V-Linearity	0~5
*	08	CCR	00~3F	00	Corner Correction	0~5
*	09	HAM	00~3F	20	V. CENT	0~5
	10	VPO	2A (Fix)	2A	V-Position	0~5
	11	HPH	00~3F	27	H. CENT	0~5
	12	BIN	00~3F	0E	Blue Intensity	0~5
	13	GIN	00~3F	10	Green Intensity	0~5
	14	RIN	00~3F	16	Red Intensity	0~5
	15	CLS	00~04	00	Color System	0~7
	16	SCO	00~0E	0A	Sub Contrast	0~5
	17	SBR	00~0E	03	Sub Brightness	0~5
	18	SSA	00~04	02	Sub Saturation	0~5
	19	SHU	00~04	02	Sub Hue	0~5
	20	SSH	(Fix)	07	Sub Sharpness	0~5
	21	G2 ADJ	read only	—	G2 Adjustment	6~7
	22	32K ADJ	Clock			

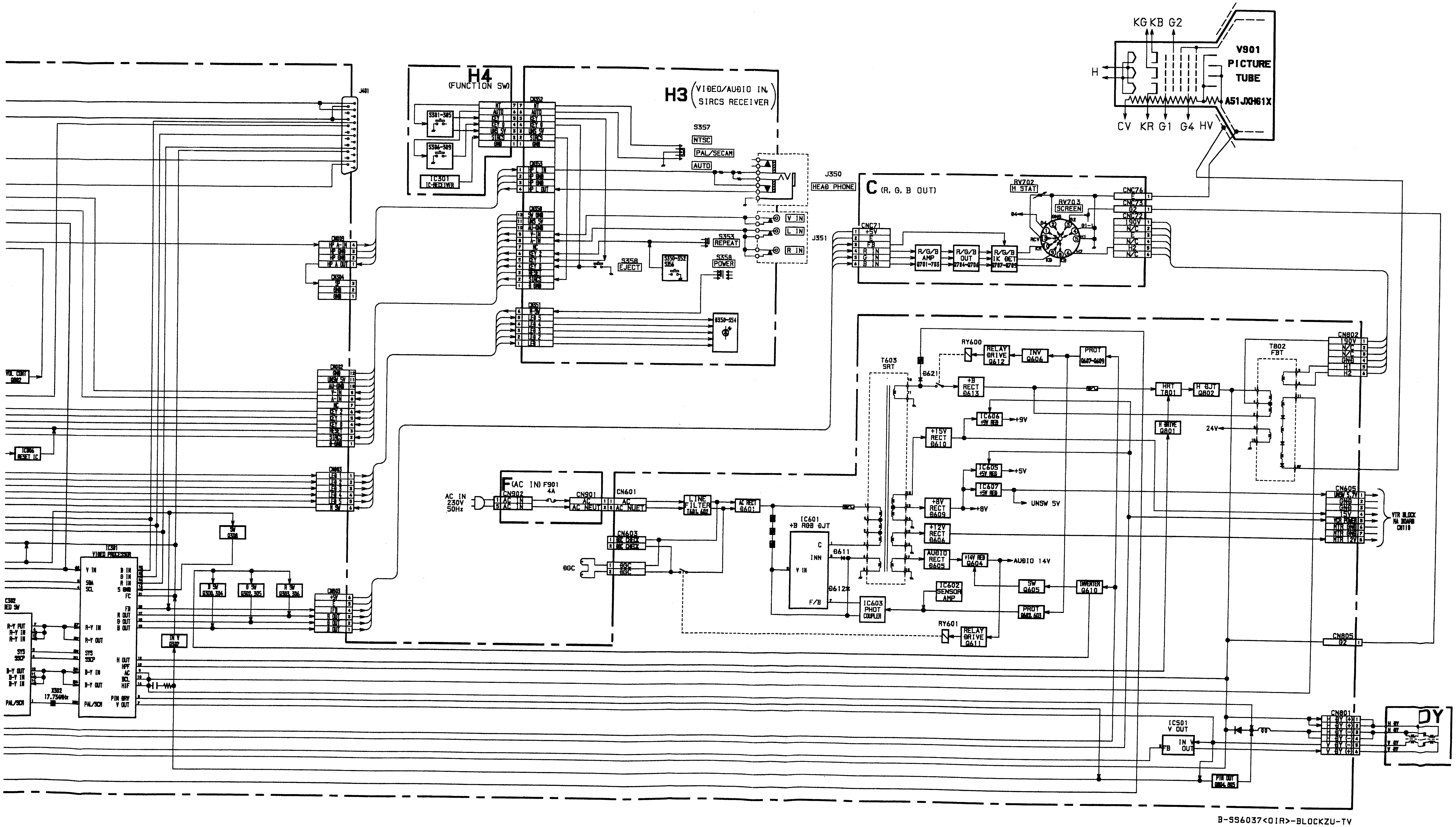
Note

*Mark ..... Don't adjust the Service Menu.

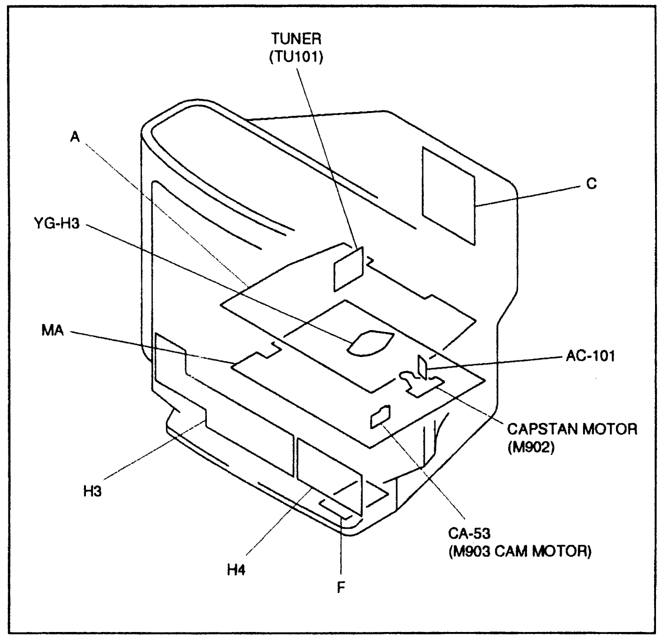
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM




H4 (FUNCTION SW)
H3 (VIDEO/AUDIO IN, SIRCS RECEIVER)
C (R, G, B OUT)
F (AC IN)
V901 PICTURE TUBE A51JXH61X
KG KB G2
CV KR G1 G4 HV
H
J401
J350
HEAD PHONE
J351
S357
NTSC
PAL/SECAM
AUTO
S353 REPEAT
S358 EJECT
S358 POWER
CN352
CN353
CN350
CN351
CN009
CN304
CN002
CN003
CN803
CNC71
CNC76
CNC73
CNC72
CN802
CN605
CN805
CN801
CN901
CN902
CN601
CN603
RV702 H STAT
RV703 SCREEN
R/G/B AMP
R/G/B OUT
R/G/B IK DET
IC301 IC-RECEIVER
IC501 V OUT
IC601 +B REG DJT
IC603 PHOT COUPLER
IC602 SENSOR AMP
IC605 +5V REG
IC606 +9V REG
IC607 +5V REG
T603 SRT
T802 FBT
RY600
RY601
RELAY DRIVE Q612
RELAY DRIVE Q611
INV Q606
PROT
+B RECT D613
+15V RECT D610
+8V RECT D609
+12V RECT D606
AUDIO RECT D605
+14V REG Q604
SW Q605
INVERTER Q610
HRT T801
H DJT Q802
H DRIVE Q801
LINE FILTER T601, 602
AC RECT D601
D611
D612
D621
F901 4A
AC IN 230V 50Hz
DGC
+9V
+5V
+8V
UNSW 5V
AUDIO 14V
24V
VTR BLOCK MA BOARD CN110
DY
PIN OUT
SW Q308
INV Q307
VOL CONT Q002
IC004 RESET IC
IC301 VIDEO PROCESSOR
X302 17.734MHz
B-SS6037<OIR>-BLOCKZU-TV

5-2. CIRCUIT BOARDS LOCATION



Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

5-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power: 1/4W

- 1/4W in resistance, 1/10W and 1/8W in chip resistance.
- (W) : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- ▭ : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
- Readings are taken with a 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
  * : Measurement impossibillity.
- —— V : B + line.
- - - - V : B – line.
  (Actual measured value may be different).
- ⇨ : signal path. (RF)
- Circled numbers are waveform reference.

Note: The symbol ⊟ display is on the component side.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

The symbol ⊟ indicate fast operating fuse. Replace only with fuse of same rating as marked.

Note: Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Le symbole ⊟ indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme maque.

A [TUNER, A/V SW, VIDEO PROCESS, PLL CONTROL DISP]

– A BOARD –

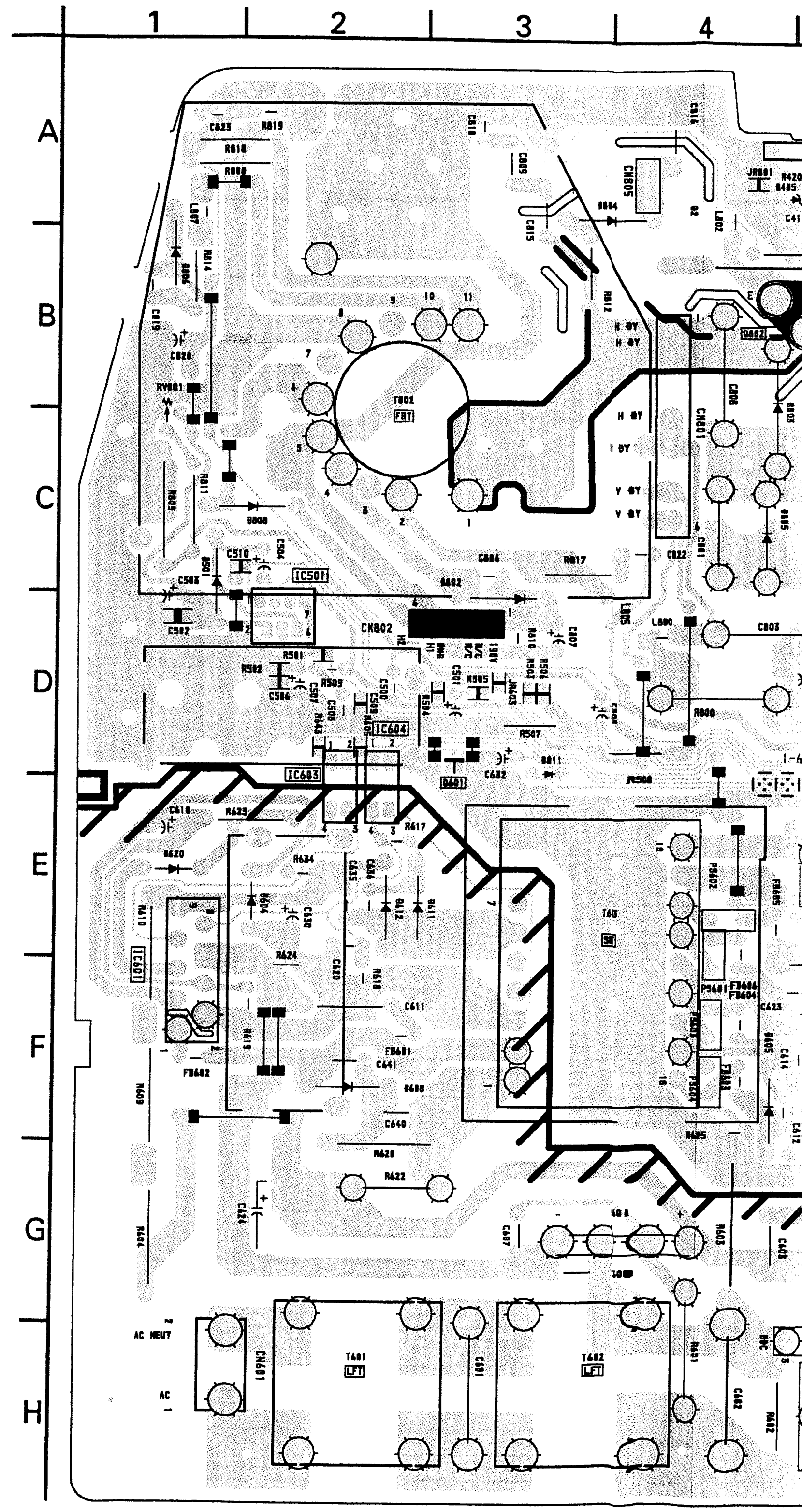
A BOARD

IC	
IC001	E-9
IC002	D-10
IC005	F-8
IC006	F-10
IC101	B-9
IC202	H-7
IC301	G-9
IC302	H-9
IC401	B-6
IC501	D-2
IC601	F-1
IC602	F-6
IC603	E-2
IC604	E-2
IC605	G-6
IC606	G-6
IC607	F-7

TRANSISTOR	
Q002	F-8
Q005	D-10
Q006	D-10
Q110	C-9
Q112	A-9
Q118	C-10
Q119	C-10
Q120	D-11
Q121	C-8
Q131	C-7
Q132	C-7
Q300	H-10
Q301	F-9
Q302	H-11
Q303	H-11
Q304	G-10
Q305	G-10
Q306	H-11
Q308	F-10
Q401	B-7
Q402	B-7
Q601	D-3
Q602	F-5
Q604	H-6
Q605	H-6
Q606	F-6
Q607	F-6
Q608	E-7
Q609	F-6
Q610	H-7
Q611	H-6
Q612	F-6
Q613	F-5
Q801	C-6
Q802	C-4
Q804	D-5
Q805	D-6

DIODE	
D002	F-8
D003	F-8
D004	E-8
D005	E-8
D006	G-11
D010	E-8
D011	E-8
D104	C-10
D107	D-10
D301	G-9
D302	G-10
D303	H-10
D304	H-10
D305	G-11
D306	H-10
D310	G-10
D311	H-10
D312	H-10
D401	B-6
D402	B-6
D403	A-5
D404	B-5
D405	A-4
D406	A-7
D407	B-5
D408	B-6
D409	B-5
D501	C-1
D601	G-3
D603	H-6
D604	E-2
D605	F-5
D606	F-5
D607	F-5
D608	F-2
D609	E-5
D610	F-5
D611	E-3
D612	E-2
D613	E-6
D614	E-5
D615	F-6
D616	F-7
D617	F-6
D618	E-7
D619	E-6
D620	E-1
D621	E-5
D801	B-5
D802	C-3
D803	B-4
D804	A-4
D805	C-4
D806	B-1
D807	D-6
D808	C-1
D811	D-3

ADJUSTING ELEMENT	
CT102	B-8
CT103	C-10
CT104	C-8
RV101	B-9
RV801	B-1



A [TUNER, A/V SW, VIDEO PROCESS, PLL CONTROL DISP]

– A BOARD –

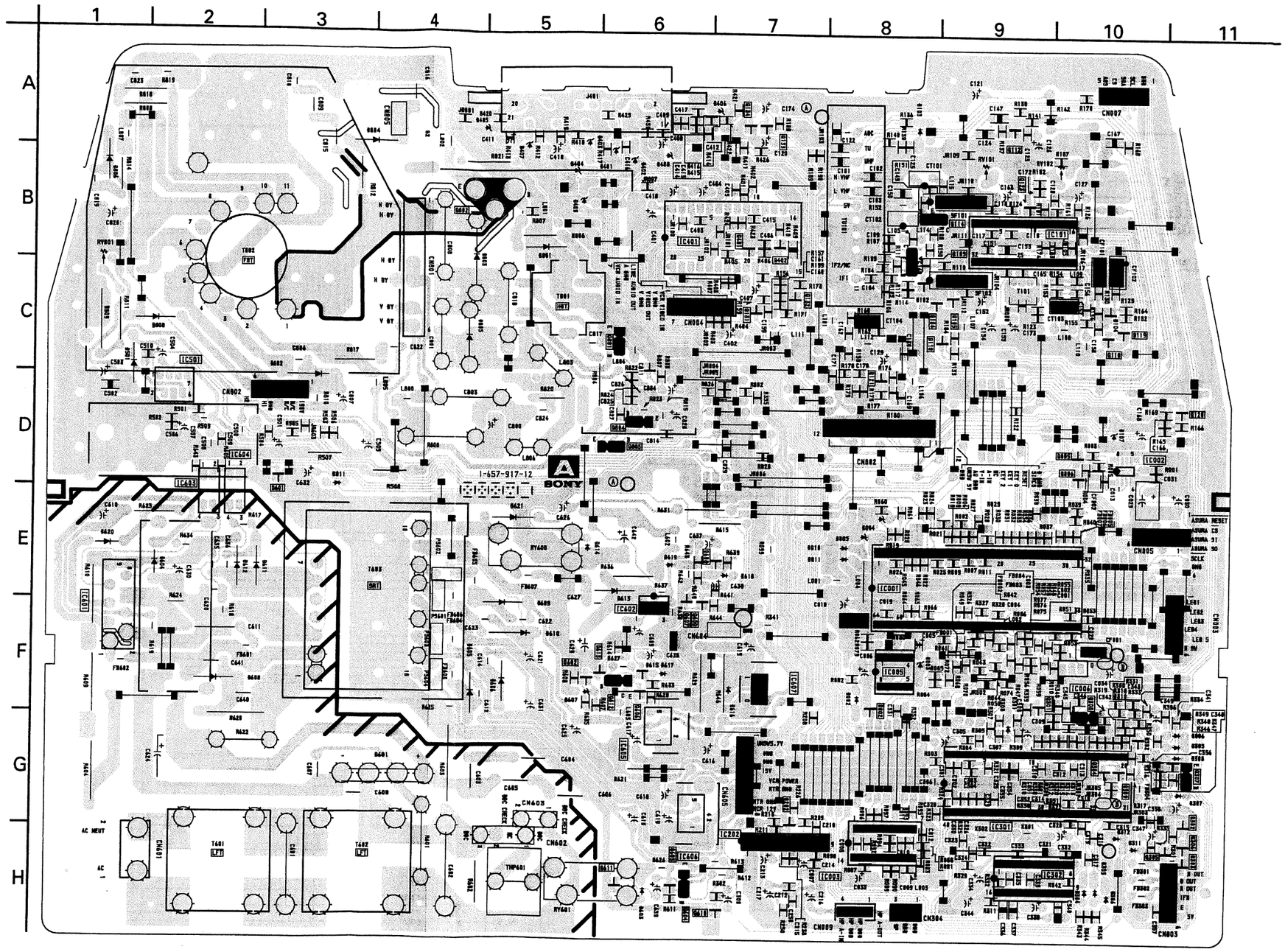
A BOARD

IC	
IC001	E-9
IC002	D-10
IC005	F-8
IC006	F-10
IC101	B-9
IC202	H-7
IC301	G-9
IC302	H-9
IC401	B-6
IC501	D-2
IC601	F-1
IC602	F-6
IC603	E-2
IC604	E-2
IC605	G-6
IC606	G-6
IC607	F-7

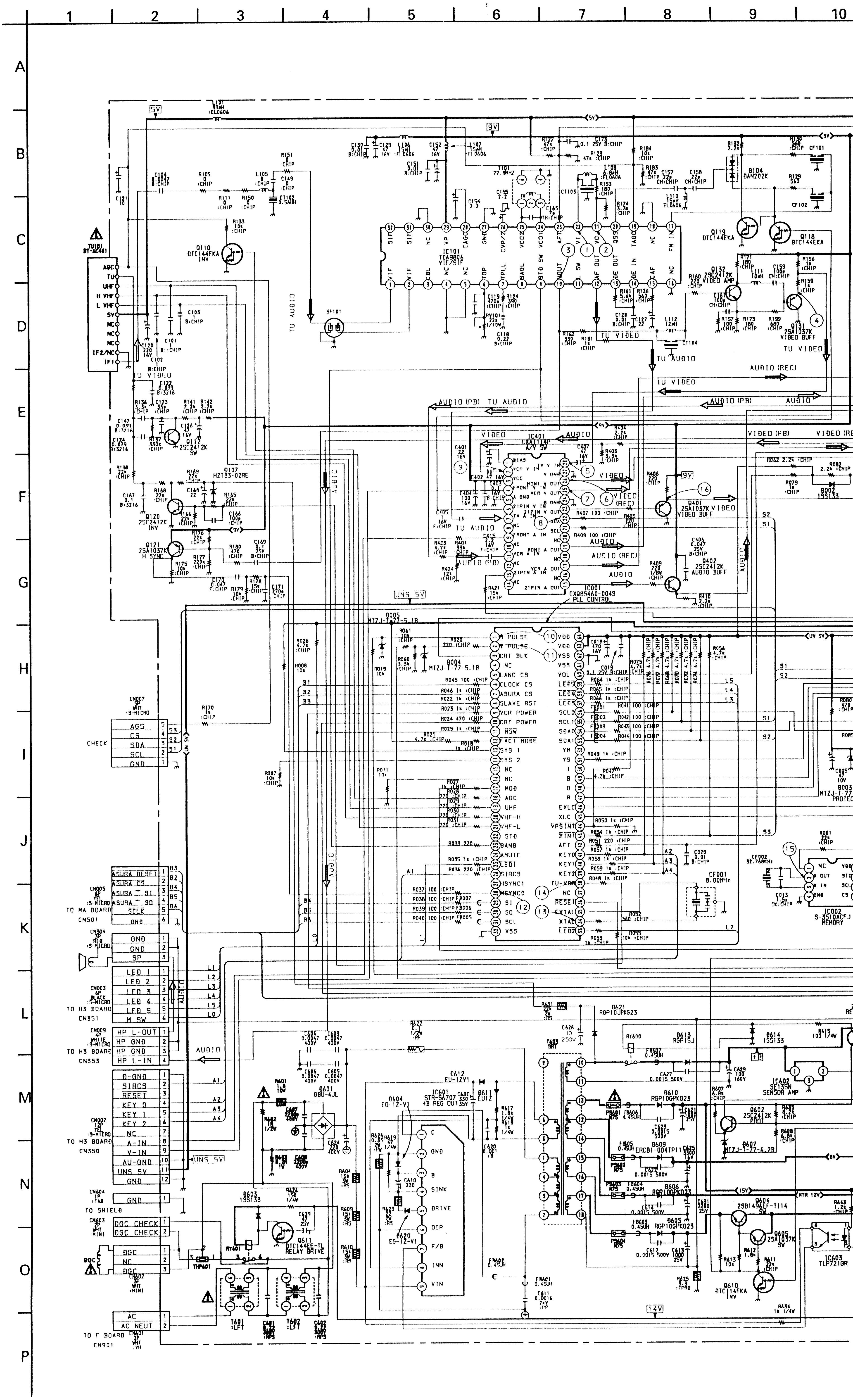
TRANSISTOR	
Q002	F-8
Q005	D-10
Q006	D-10
Q110	C-9
Q112	A-9
Q118	C-10
Q119	C-10
Q120	D-11
Q121	C-8
Q131	C-7
Q132	C-7
Q300	H-10
Q301	F-9
Q302	H-11
Q303	H-11
Q304	G-10
Q305	G-10
Q306	H-11
Q308	F-10
Q401	B-7
Q402	B-7
Q601	D-3
Q602	F-5
Q604	H-6
Q605	H-6
Q606	F-6
Q607	F-6
Q608	E-7
Q609	F-6
Q610	H-7
Q611	H-6
Q612	F-6
Q613	F-5
Q801	C-6
Q802	C-4
Q804	D-5
Q805	D-6

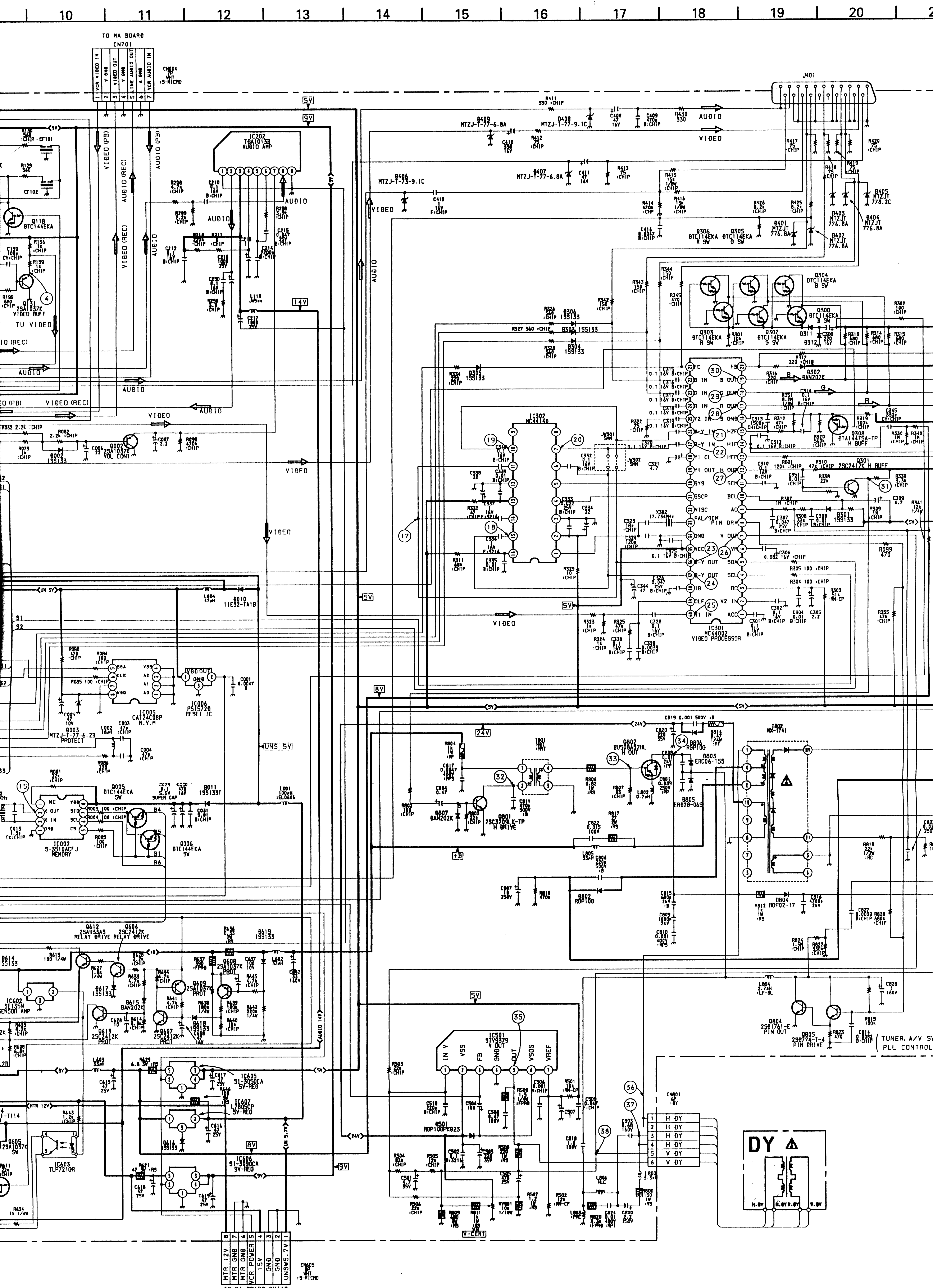
DIODE	
D002	F-8
D003	F-8
D004	E-8
D005	E-8
D006	G-11
D010	E-8
D011	E-8
D104	C-10
D107	D-10
D301	G-9
D302	G-10
D303	H-10
D304	H-10
D305	G-11
D306	H-10
D310	G-10
D311	H-10
D312	H-10
D401	B-6
D402	B-6
D403	A-5
D404	B-5
D405	A-4
D406	A-7
D407	B-5
D408	B-6
D409	B-5
D501	C-1
D601	G-3
D603	H-6
D604	E-2
D605	F-5
D606	F-5
D607	F-5
D608	F-2
D609	E-5
D610	F-5
D611	E-3
D612	E-2
D613	E-6
D614	E-5
D615	F-6
D616	F-7
D617	F-6
D618	E-7
D619	E-6
D620	E-1
D621	E-5
D801	B-5
D802	C-3
D803	B-4
D804	A-4
D805	C-4
D806	B-1
D807	D-6
D808	C-1
D811	D-3

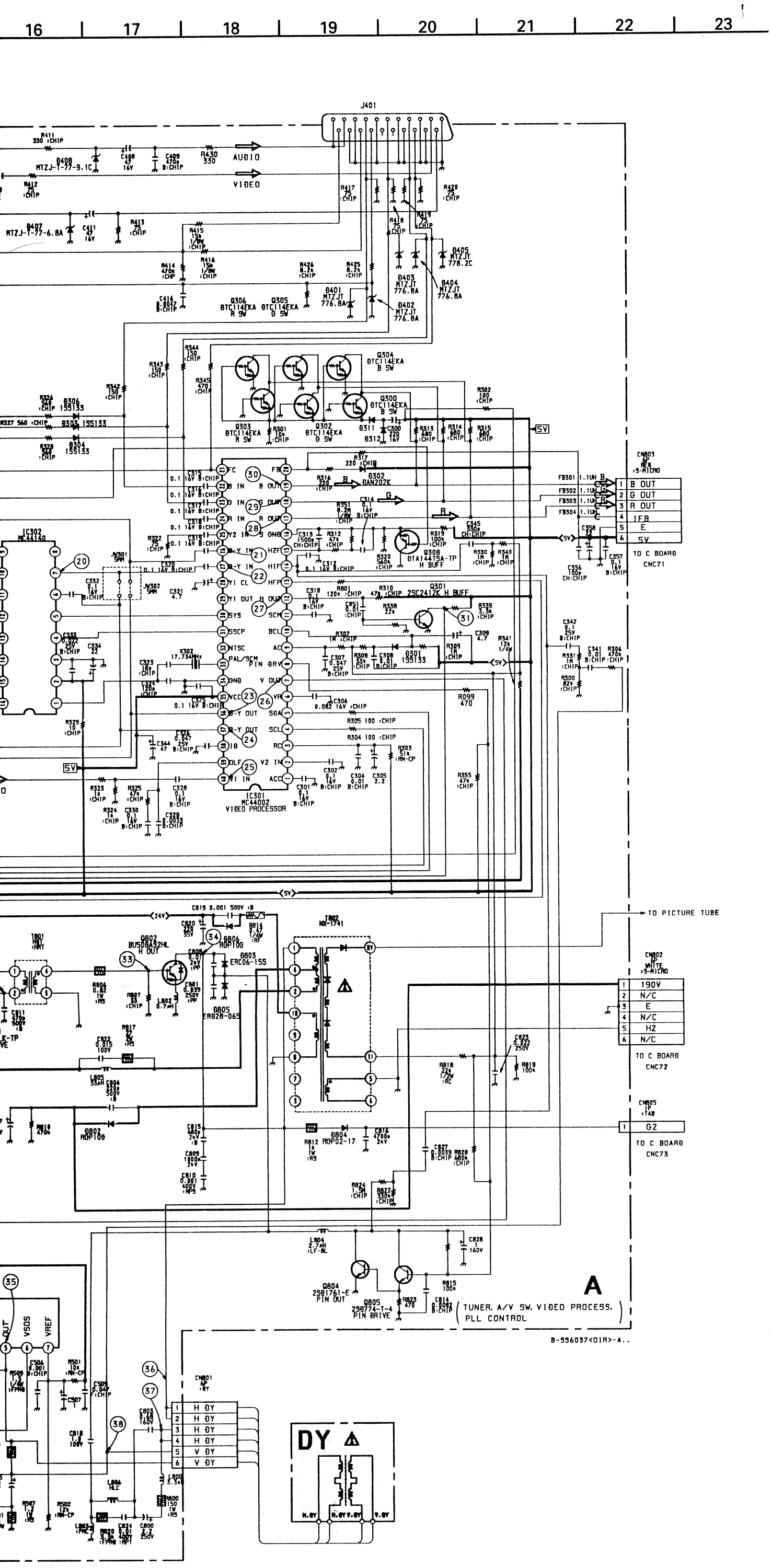
ADJUSTING ELEMENT	
CT102	B-8
CT103	C-10
CT104	C-8
RV101	B-9
RV801	B-1



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.


TU101 BT-AC401
IC101 TDA9806 VIF/SIF
Q110 DTC144EKA INV
Q112 2SC2412K SW
Q120 2SC2412K INV
Q121 2SA1037K H SYNC
D107 HZT33-02RE
SF101
T101 77.8MHZ
Q119 DTC144EKA
Q118 DTC144EKA
D104 DAN202K
Q132 2SC2412K VIDEO AMP
Q131 2SA1037K VIDEO BUFF
TU VIDEO
TU AUDIO
AUDIO (REC)
AUDIO (PB)
VIDEO (PB)
IC401 CXA1114P A/V SW
Q401 2SA1037K VIDEO BUFF
Q402 2SC2412K AUDIO BUFF
IC001 CXQ85460-0049 PLL CONTROL
D005 MTZJ-T-77-5.1B
D004 MTZJ-T-77-5.1B
D002 1SS133
D003 MTZJ-T-77 PROTECT
CF001 8.00MHz
CF002 32.768KHz
IC002 S-3510ACFJ MEMORY
CN007 5P WHT :S-MICRO
CHECK
AGS
CS
SDA
SCL
GND
CN005 6P YEL :S-MICRO TO MA BOARD CN501
ASURA RESET
ASURA CS
ASURA SI
ASURA SO
SCLK
CN304 3P RED :S-MICRO
SP
CN003 6P BLACK :S-MICRO TO H3 BOARD CN351
LED 1
LED 2
LED 3
LED 4
LED 5
M SW
CN009 4P WHITE :S-MICRO TO H3 BOARD CN353
HP L-OUT
HP GND
HP L-IN
CN002 12P YEL :S-MICRO TO H3 BOARD CN350
D-GND
SIRCS
RESET
KEY 0
KEY 1
KEY 2
NC
A-IN
V-IN
AU-GND
UNS 5V
CN604 1P :TAB TO SHIELD
CN603 2P WHT :MINI
DGC CHECK
DGC
CN602 3P WHT :MINI
AC
AC NEUT
TO F BOARD CN901
CN601 2P WHT :VH
D601 GBU-4JL
D603 1SS133
Q611 DTC144EE-TL RELAY DRIVE
RY601
THP601
T601 :LFT
T602 :LFT
IC601 STR-S6707 +B REG OUT
D604 EG-1Z-V1
D620 EG-1Z-V1
D612 EU-1ZV1
D611 EU1Z
D621 RGP10JPKG23
T603 SRT
RY600
D613 RGP15J
D614 1SS133
IC602 SE135N SENSOR AMP
D610 RGP10GPKG23
Q602 2SC2412K PROT
D607 MTZJ-T-77-6.2B
D609 ERC81-004TP11
D606 RGP10GPKG23
D605 RGP10GPKG23
Q604 2SB1496EF-T114 SW
Q605 2SA1037K SW
Q610 DTC114EKA INV
IC603 TLP7210R

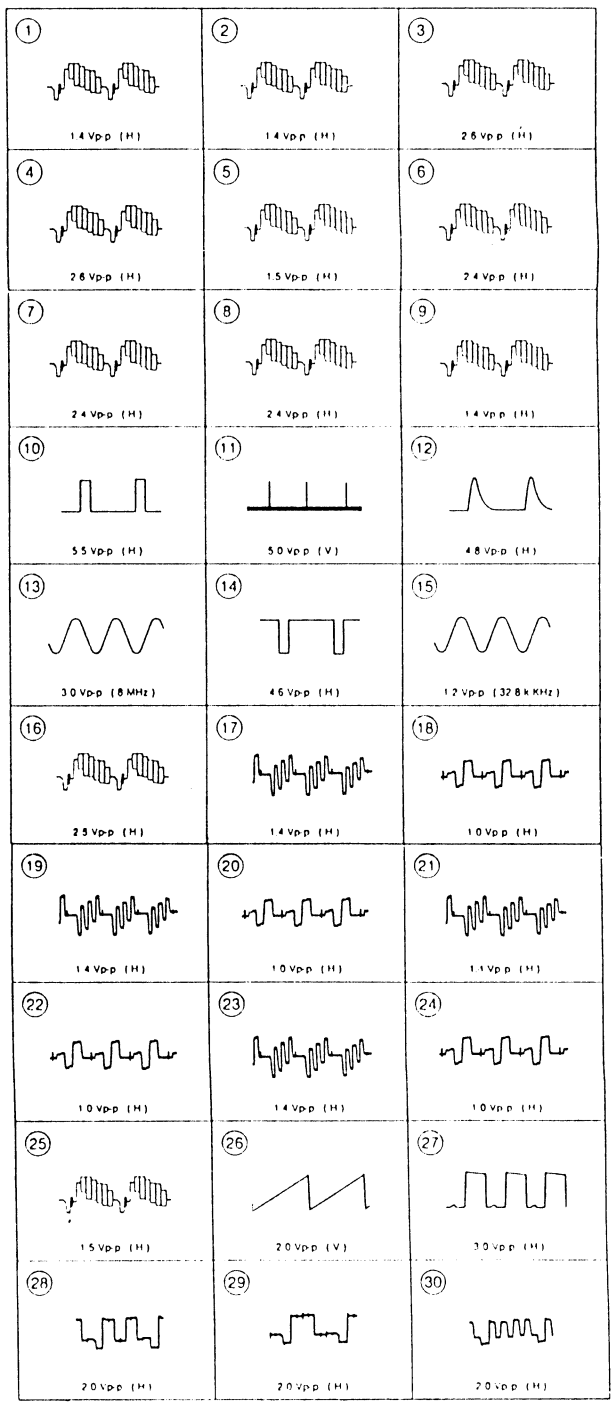

10
11
12
13
14
15
16
17
18
19
20
TO MA BOARD
CN701
VCR VIDEO IN
V GND
VIDEO OUT
V GND
LINE AUDIO OUT
A GND
VCR AUDIO IN
CN004
7P
WHT
:S-MICRO
J401
IC202
TDA1013B
AUDIO AMP
VIDEO (PB)
AUDIO (PB)
AUDIO (REC)
VIDEO (REC)
AUDIO
VIDEO
TU VIDEO
Q118
DTC144EKA
Q131
2SA1037K
VIDEO BUFF
Q002
2SA1037K
VOL CONT
IC302
MC44140
IC301
MC44002
VIDEO PROCESSOR
Q306
DTC114EKA
R SW
Q305
DTC114EKA
G SW
Q304
DTC114EKA
B SW
Q303
DTC114EKA
R SW
Q302
DTC114EKA
G SW
Q300
DTC114EKA
B SW
Q308
DTA144TSA-TP
H BUFF
Q301
2SC2412K H BUFF
X302
17.734MHz
IC005
CA124C08P
N.V.M
IC006
PST5720
RESET IC
IC002
S-3510ACFJ
MEMORY
Q005
DTC144EKA
SW
Q006
DTC144EKA
SW
D003
MTZJ-T-77-6.2B
PROTECT
T801
HDT
Q802
BU508A52HL
H OUT
Q801
2SC3209LK-TP
H DRIVE
T802
NX-1741
Q612
2SA933AS
RELAY DRIVE
Q606
2SC2412K
RELAY DRIVE
IC602
SE135N
SENSOR AMP
Q613
2SC2412K
PROT
Q607
2SC2412K
PROT
Q608
2SA1037K
PROT
Q609
2SA1037K
PROT
IC605
SI-3050CA
5V-REG
IC607
L7805CP
5V-REG
IC606
SI-3090CA
9V-REG
IC603
TLP7210R
Q605
2SA1037K
SW
IC501
STV9379
V OUT
IN V
VSS
FB
GND
OUT
VSOS
VREF
D501
RGP10GPK023
V-CENT
Q804
2SD1761-E
PIN OUT
Q805
2SB774-T-4
PIN DRIVE
TUNER, A/V SW
PLL CONTROL
CN801
6P
:DY
H DY
H DY
H DY
H DY
V DY
V DY
DY
MTR 12V
MTR GND
MTR GND
VCR POWER
15V
GND
GND
UNSW5.7V
CN605
8P
WHT
:S-MICRO
TO MA BOARD CN110

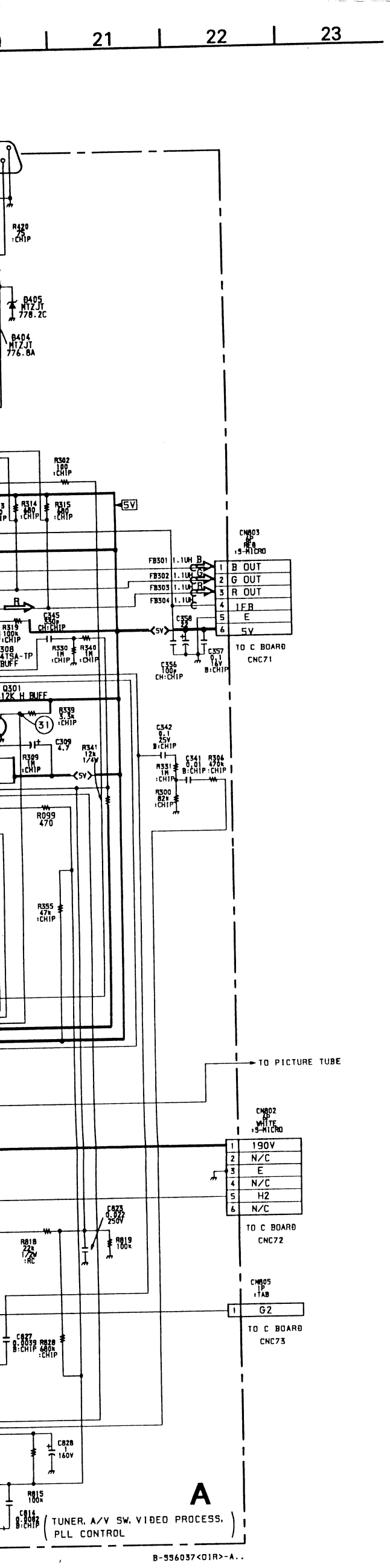


A BOARD

REF.	Pin No.	VOLTAGE	REF.	Pin No.	VOLTAGE	REF.	Pin No.	VOLTAGE
IC001	1	0.4	IC006	2	4.8	IC301	32	1.8
	2	0.3	IC101	1	3.4		33	2.2
	3	0		2	3.4		34	2.7
	4	0		3	0		37	2.7
	6	0.2		6	1.1		38	1.0
	7	4.5		7	2.7		39	2.4
	8	4.9		8	0		40	3.0
	9	4.9		9	0	IC302	1	1.7
	10	4.2		10	2.3		4	1.4
	11	0		11	0		5	0.2
	12	5.0		12	2.5		6	1.5
	13	0		13	2.5		7	1.5
	14	0		14	2.5		10	1.5
	16	*		15	2.3		11	1.5
	17	1.0		17	2.8		14	1.2
	18	0		19	1.7		15	1.2
	19	0		20	2.1		16	1.7
	20	0		21	2.1	IC401	1	4.8
	21	4.8		22	2.1		2	4.8
	22	4.7		23	1.8		4	4.7
	23	4.7		24	2.9		6	4.8
	24	0		25	2.8		7	4.8
	25	4.9		26	2.5		9	4.8
	26	5.0		24	3.1		11	4.9
	28	0.4		31	0		13	4.8
	29	0.3		32	0		15	4.8
	30	0.3	IC202	2	8.1		17	4.9
	31	2.3		4	16.3		19	4.9
	33	4.9		5	1.5		21	4.8
	34	2.5		6	6.9		22	4.8
	35	2.4		7	5.6		23	4.8
	36	4.9		8	3.0		25	4.8
	38	0	IC301	1	1.7		26	4.7
	39	5.1		2	1.0		28	4.8
	40	5.1		3	1.4	IC501	1	2.8
	41	4.0		4	4.9		3	1.4
	42	4.8		5	4.9		5	20.5
	43	5.1		6	0.8		6	30.1
	44	0		7	1.4		7	2.8
	45	2.9		8	1.2	IC601	1	0.5
	46	2.9		9	1.0		3	0
	47	0		10	2.7		4	0
	48	0		11	2.7		5	0
	49	0		12	1.5		6	0
	51	0		13	0.5		7	0
	53	4.9		14	1.3		8	0
	54	4.9		15	2.1		9	0
	55	4.9		17	2.9	IC602	1	118
	56	4.9		18	2.7		2	14.6
	57	5.8		19	2.7	IC603	1	15.6
	58	5.8		20	2.5		2	14.6
	59	5.8		21	0		3	0
	60	5.8		22	3.3		4	0
IC002	1	5.1		23	3.3	IC605	2	4.9
	2	1.4		24	3.3	IC606	2	4.9
	3	1.2		25	3.3	IC607	3	0
	5	0.2		26	3.3			
	6	1.9		27	3.3			
	7	2.6		28	1.2			
IC005	5	4.9		30	0.2			
	6	4.9		31	1.4			

A BOARD WAVEFORMS





A BOARD

REF.	Pin No.	VOLTAGE
IC001	1	0.4
	2	0.3
	3	0
	4	0
	6	0.2
	7	4.5
	8	4.9
	9	4.9
	10	4.2
	11	0
	12	5.0
	13	0
	14	0
	16	*
	17	1.0
	18	0
	19	0
	20	0
	21	4.8
	22	4.7
	23	4.7
	24	0
	25	4.9
	26	5.0
	28	0.4
	29	0.3
	30	0.3
	31	2.3
	33	4.9
	34	2.5
	35	2.4
	36	4.9
	38	0
	39	5.1
	40	5.1
	41	4.0
	42	4.8
	43	5.1
	44	0
	45	2.9
	46	2.9
	47	0
	48	0
	49	0
	51	0
	53	4.9
	54	4.9
	55	4.9
	56	4.9
	57	5.8
	58	5.8
	59	5.8
	60	5.8
IC002	1	5.1
	2	1.4
	3	1.2
	5	0.2
	6	1.9
	7	2.6
IC005	5	4.9
	6	4.9

REF.	Pin No.	VOLTAGE
IC006	2	4.8
IC101	1	3.4
	2	3.4
	3	0
	6	1.1
	7	2.7
	8	0
	9	0
	10	2.3
	11	0
	12	2.5
	13	2.5
	14	2.5
	15	2.3
	17	2.8
	19	1.7
	20	2.1
IC202	21	2.1
	22	2.1
	23	1.8
	24	2.9
	25	2.8
	26	2.5
	28	3.1
	31	0
	32	0
	2	8.1
	4	16.3
	5	1.5
	6	6.9
	7	5.6
	8	3.0
IC301	1	1.7
	2	1.0
	3	1.4
	4	4.9
	5	4.9
	6	0.8
	7	1.4
	8	1.2
	9	1.0
	10	2.7
	11	2.7
	12	1.5
	13	0.5
	14	1.3
	15	2.1
	17	2.9
	18	2.7
	19	2.7
	20	2.5
	21	0
	22	3.3
	23	3.3
	24	3.3
	25	3.3
	26	3.3
	27	3.3
	28	1.2
	30	0.2
	31	1.4

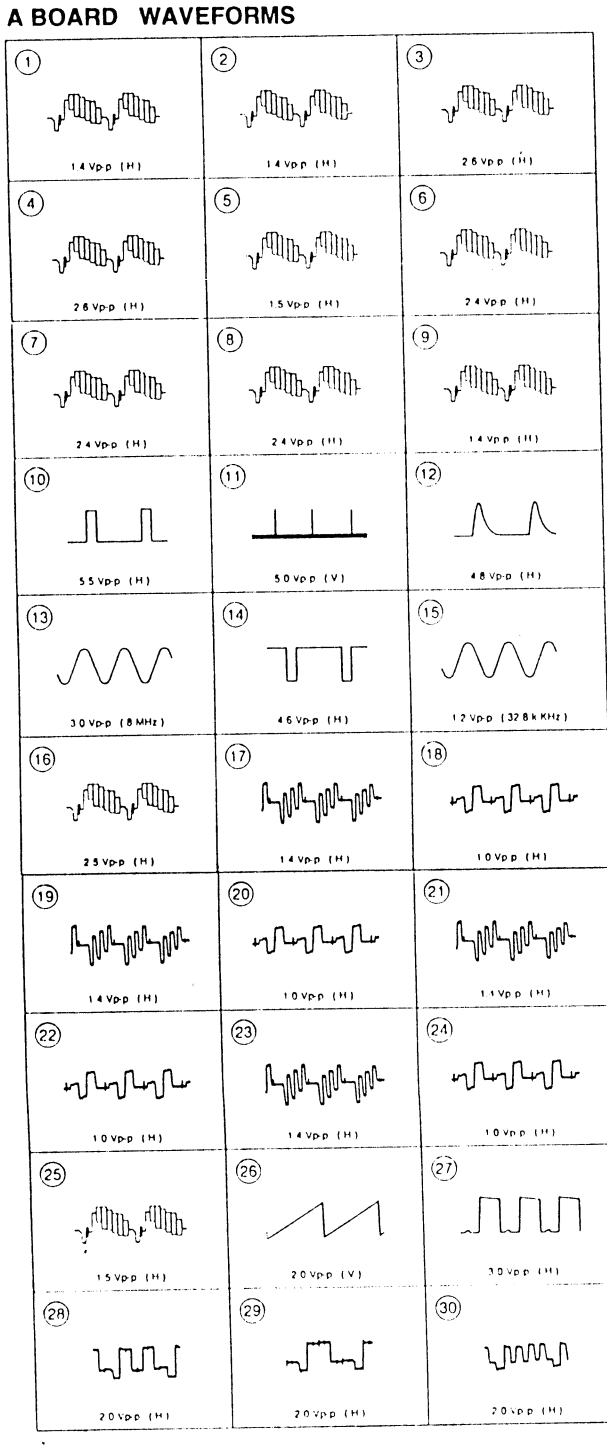
REF.	Pin No.	VOLTAGE
IC301	32	1.8
	33	2.2
	34	2.7
	37	2.7
	38	1.0
	39	2.4
	40	3.0
IC302	1	1.7
	4	1.4
	5	0.2
	6	1.5
	7	1.5
	10	1.5
	11	1.5
	14	1.2
	15	1.2
	16	1.7
IC401	1	4.8
	2	4.8
	4	4.7
	6	4.8
	7	4.8
	9	4.8
	11	4.9
	13	4.8
	15	4.8
	17	4.9
	19	4.9
	21	4.8
	22	4.8
	23	4.8
	25	4.8
	26	4.7
	28	4.8
IC501	1	2.8
	3	1.4
	5	20.5
	6	30.1
	7	2.8
IC601	1	0.5
	3	0
	4	0
	5	0
	6	0
	7	0
	8	0
	9	0
IC602	1	118
	2	14.6
IC603	1	15.6
	2	14.6
	3	0
	4	0
IC605	2	4.9
IC606	2	4.9
IC607	3	0

A BOARD

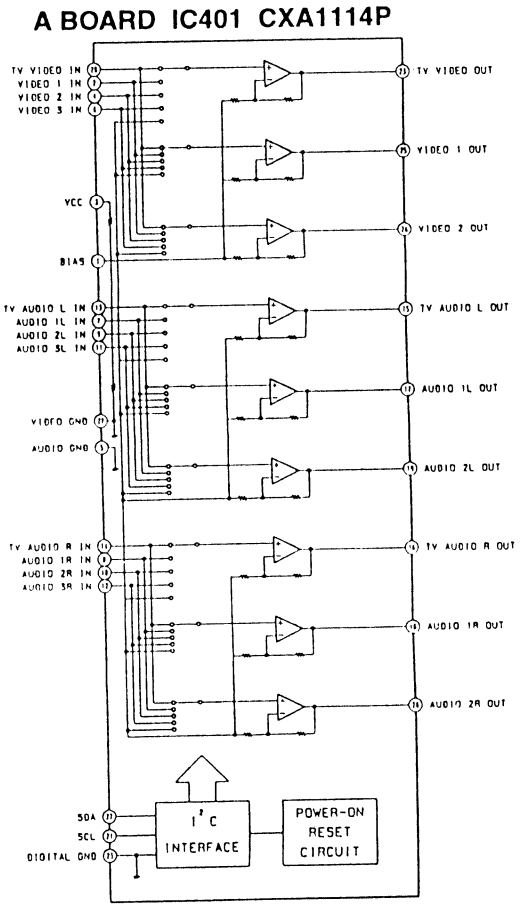
REF.		VOLTAGE
Q002	E	4.1
	B	3.4
Q005	E	0.3
	C	2.3
	B	0.2
Q006	E	0.3
	C	2.3
	B	0.2
Q110	C	1.7
	B	0
Q112	C	2.8
	B	0.7
Q120	C	4.0
	B	0.6
Q121	C	2.2
	B	7.3
Q131	E	2.4
	B	1.7
Q132	E	1.7
	C	1.7
	B	2.3
Q300	E	0
	C	2.4
Q301	C	0.8
	B	-0.3
Q302	E	0
	C	2.5
Q303	E	0
	C	2.5
Q304	C	2.4
	B	0
Q305	C	2.5
	B	0
Q306	C	2.5
	B	0
Q308	C	0
	B	0
Q401	E	5.4
	B	4.8
Q402	E	4.2
	B	4.8

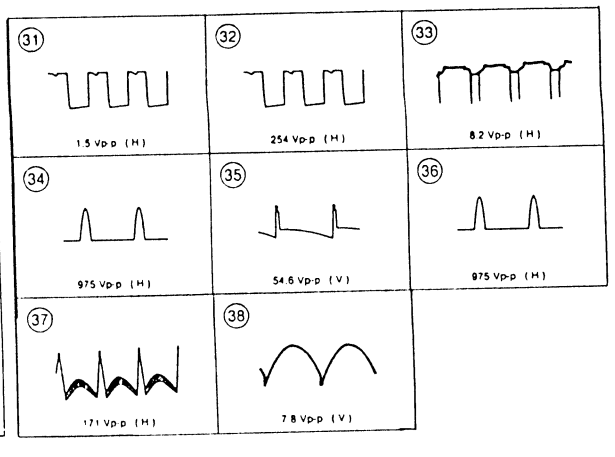
REF.		VOLTAGE
Q602	E	6.4
	C	14.6
	B	0
Q604	E	16.9
	C	16.8
	B	16.1
Q605	E	16.1
	C	16.8
	B	16.2
Q606	E	0
	C	0
	B	0.8
Q607	C	3.3
	B	0
Q608	E	121
	C	0.2
	B	121
Q609	E	3.3
	C	0
	B	3.3
Q610	C	0.2
	B	3.3
Q611	C	16.8
	B	0
Q612	E	16.3
	C	16.3
	B	15.6
Q613	C	0
	B	0.7
Q801	C	121
	B	0
Q802	E	0
	C	137
	B	-0.3
Q804	C	19.2
	B	0.6
Q805	E	0.6
	C	19.2
	B	1.2

A BOARD WAVEFORMS

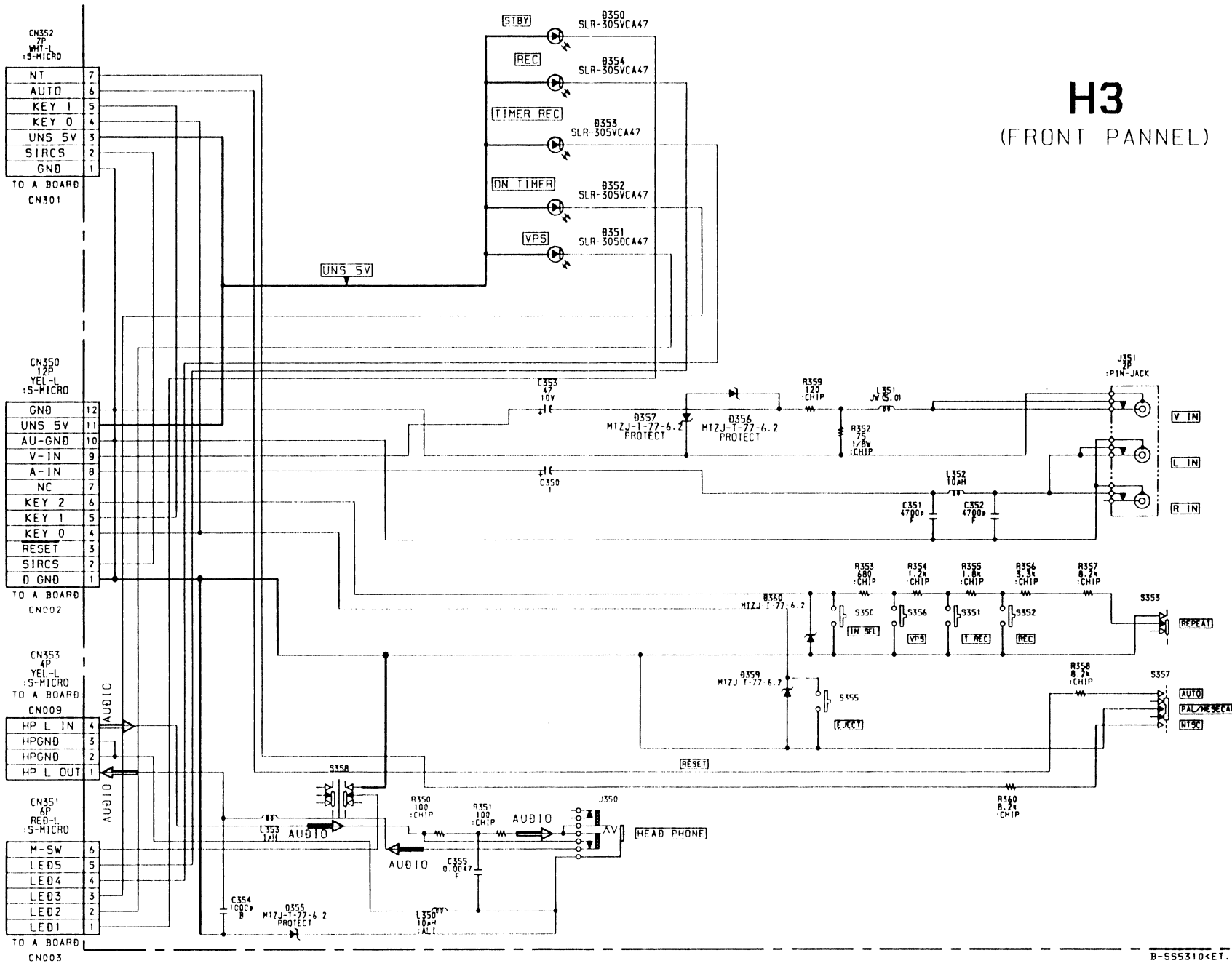


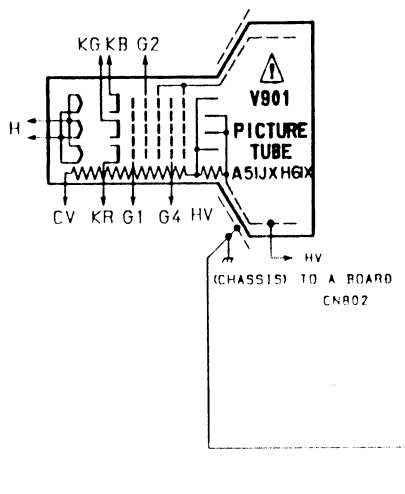
A BOARD IC401 CXA1114P

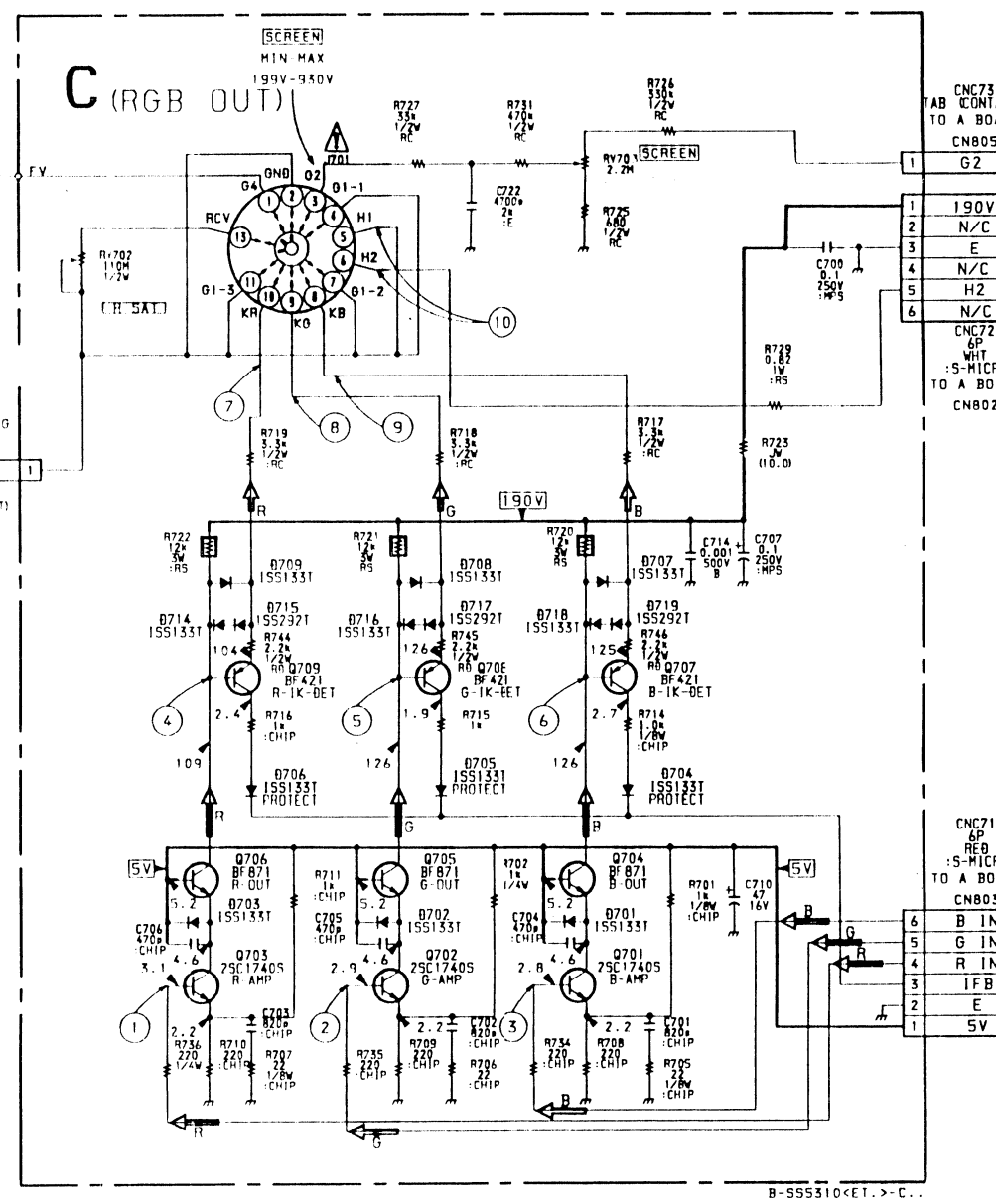




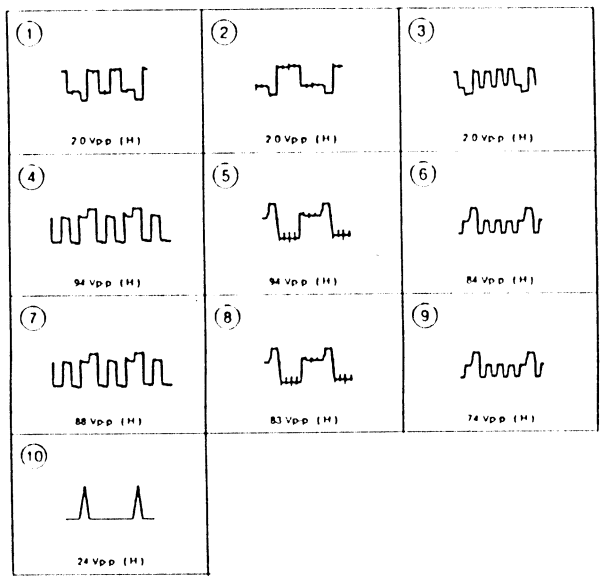
H3
(FRONT PANNEL)

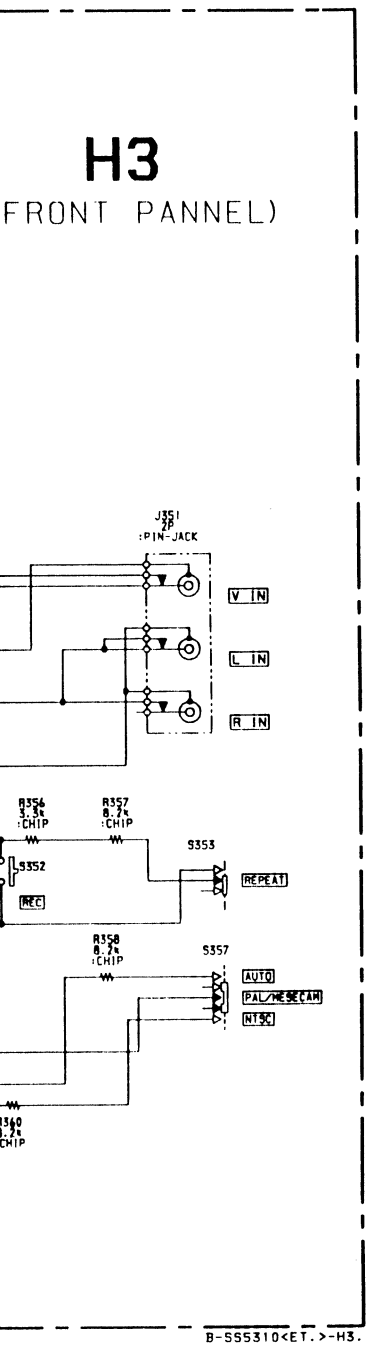


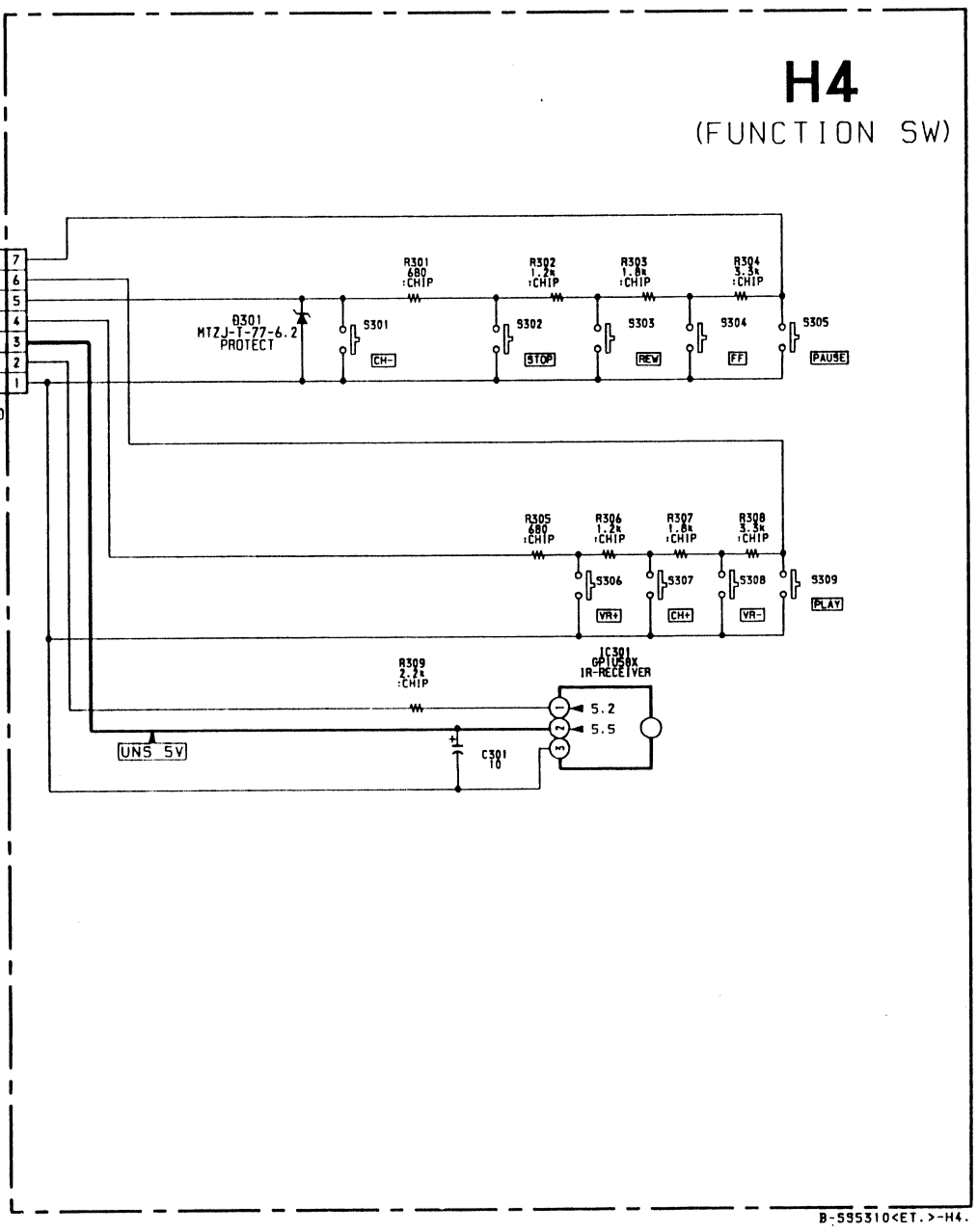


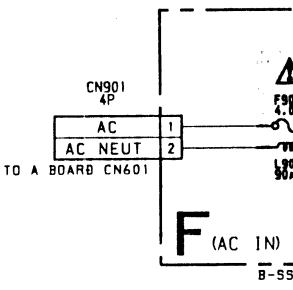


C BOARD WAVEFORMS



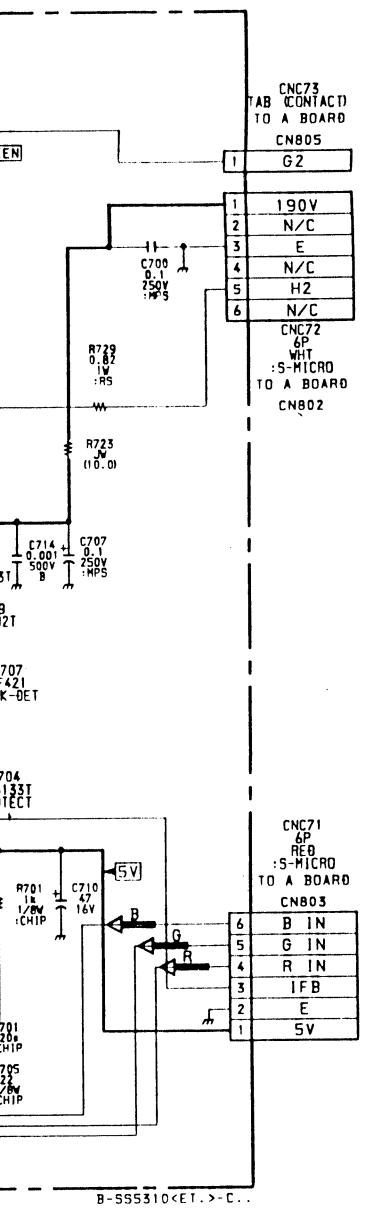






H4 BOARD

REF.	Pin No.	VOLTAGE
IC301	①	5.2

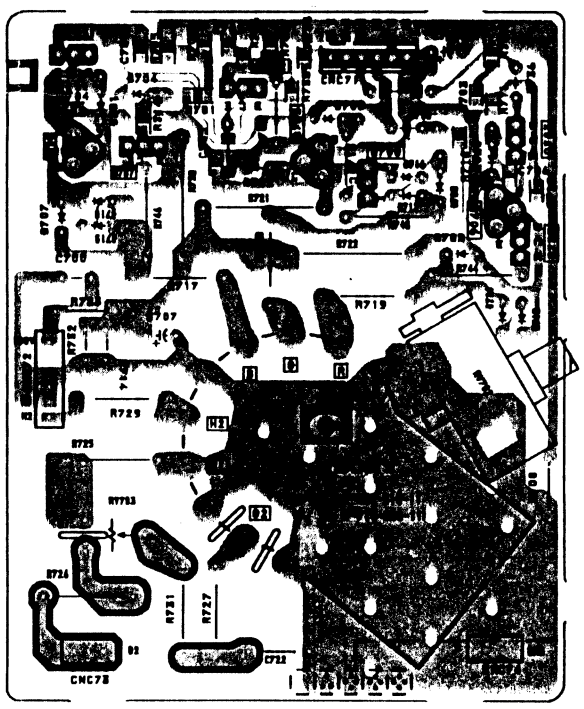


C BOARD

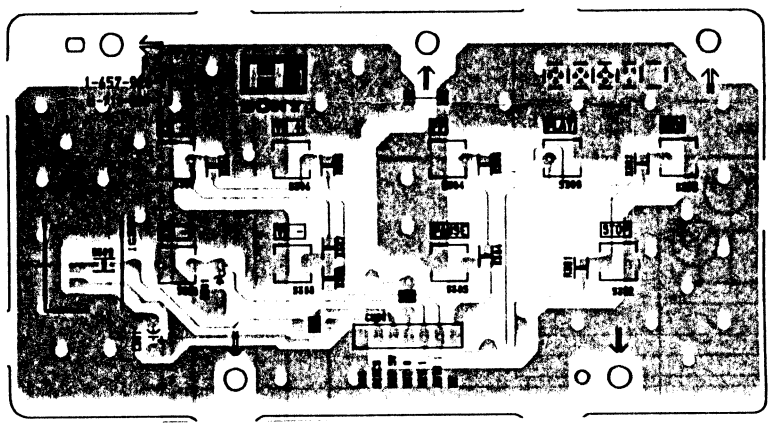
REF.		VOLTAGE
Q701	E	2.2
	C	4.6
	B	2.8
Q702	E	2.2
	C	4.6
	B	2.9
Q703	E	2.2
	C	4.6
	B	3.1
Q704	E	4.6
	C	126.0
Q705	E	4.6
	C	126.0
Q706	E	4.6
	C	109.0
Q707	E	125.0
	C	2.7
	B	126.0
Q708	E	126.0
	C	1.9
	B	126.0
Q709	E	104.0
	C	2.4
	B	109.0

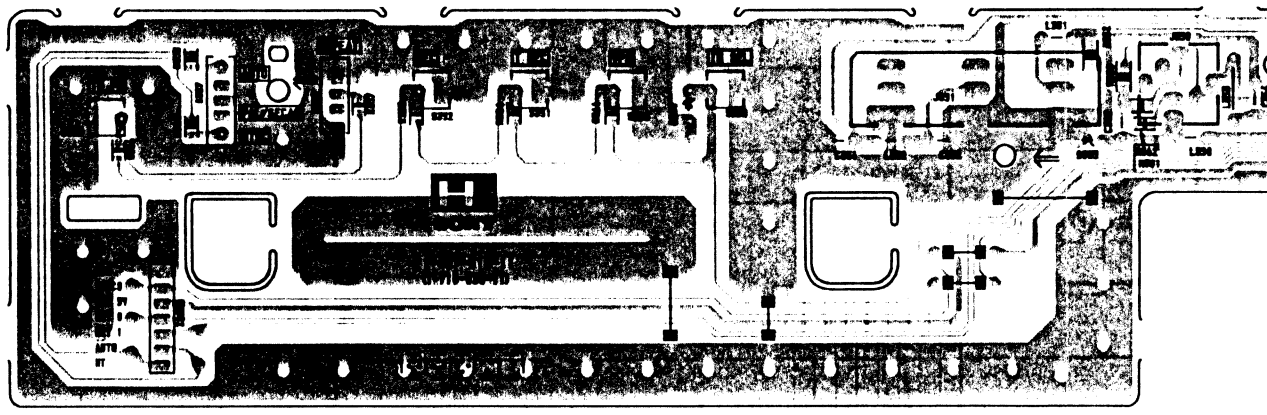
C [RGB OUT] **F** [AC IN] **H3** [VIDEO/AUDIO IN, SIRCS RECEIVER] **H4** [FUNCTION SW]

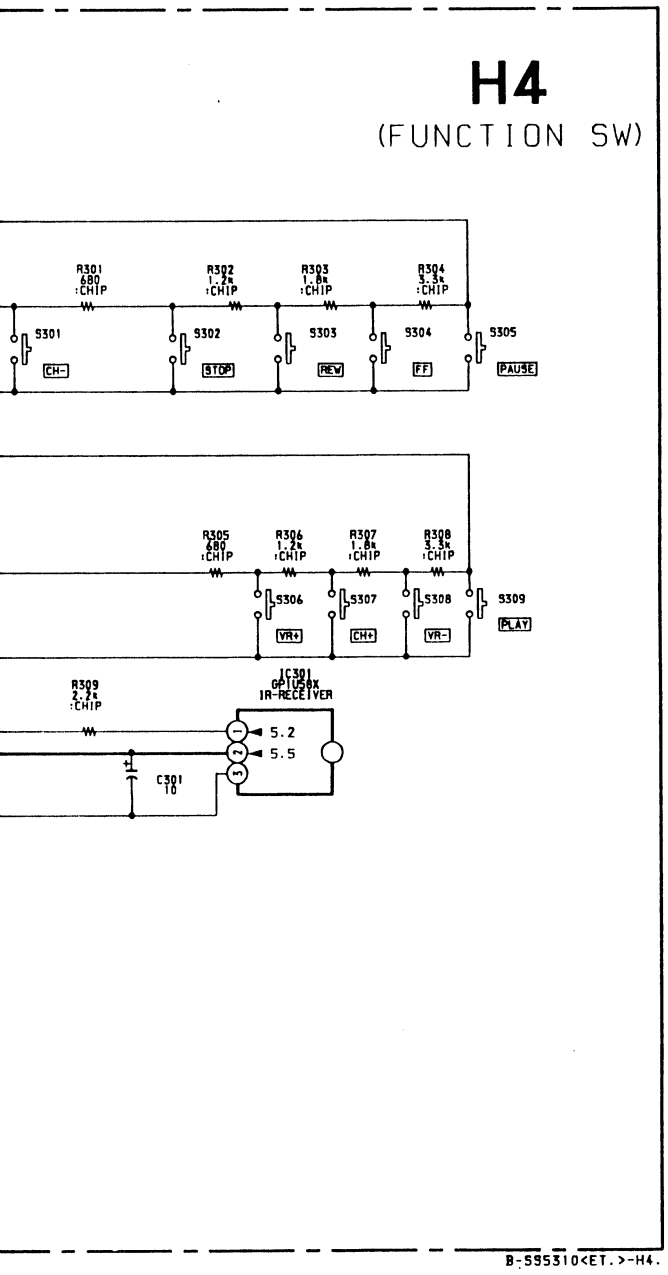
– C BOARD –

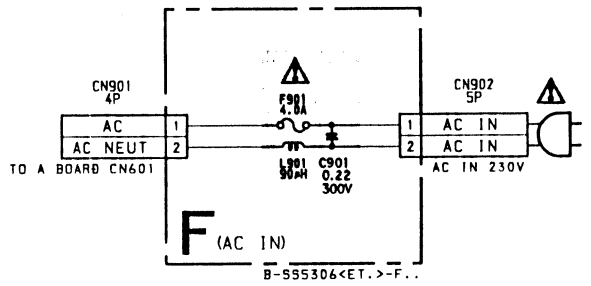


– H4 BOARD –







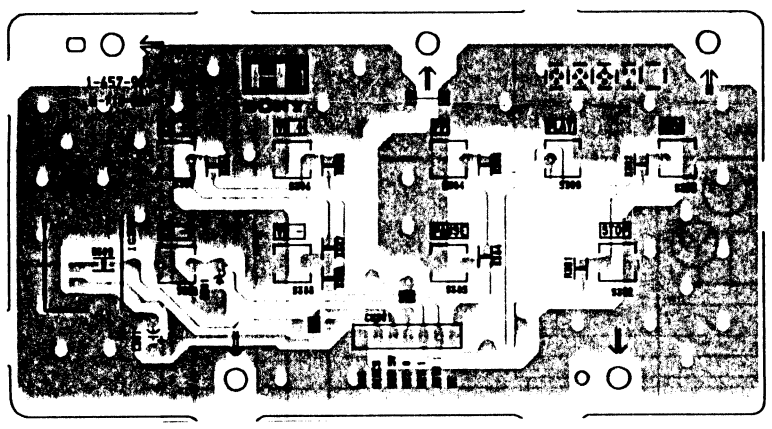


H4 BOARD

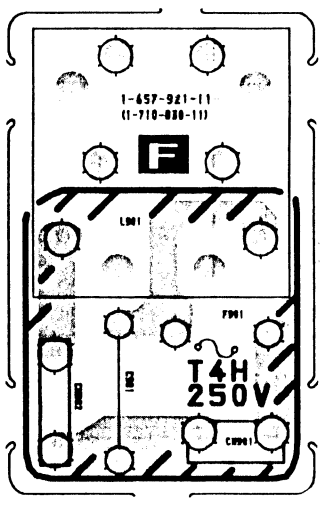
REF.	Pin No.	VOLTAGE
IC301	①	5.2

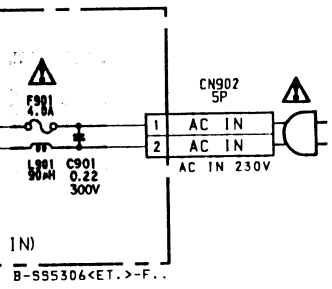
H4 [FUNCTION SW]

– H4 BOARD –



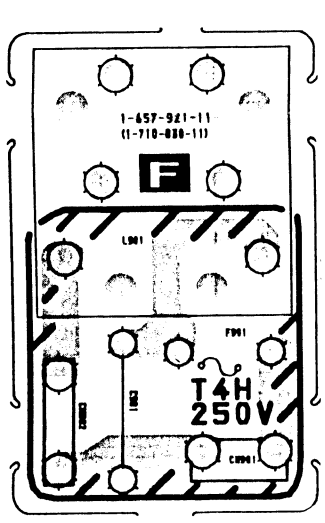
– F BOARD –

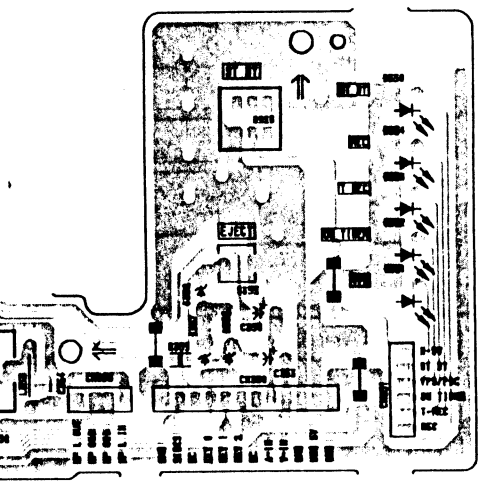




VIDEO section

– F BOARD –

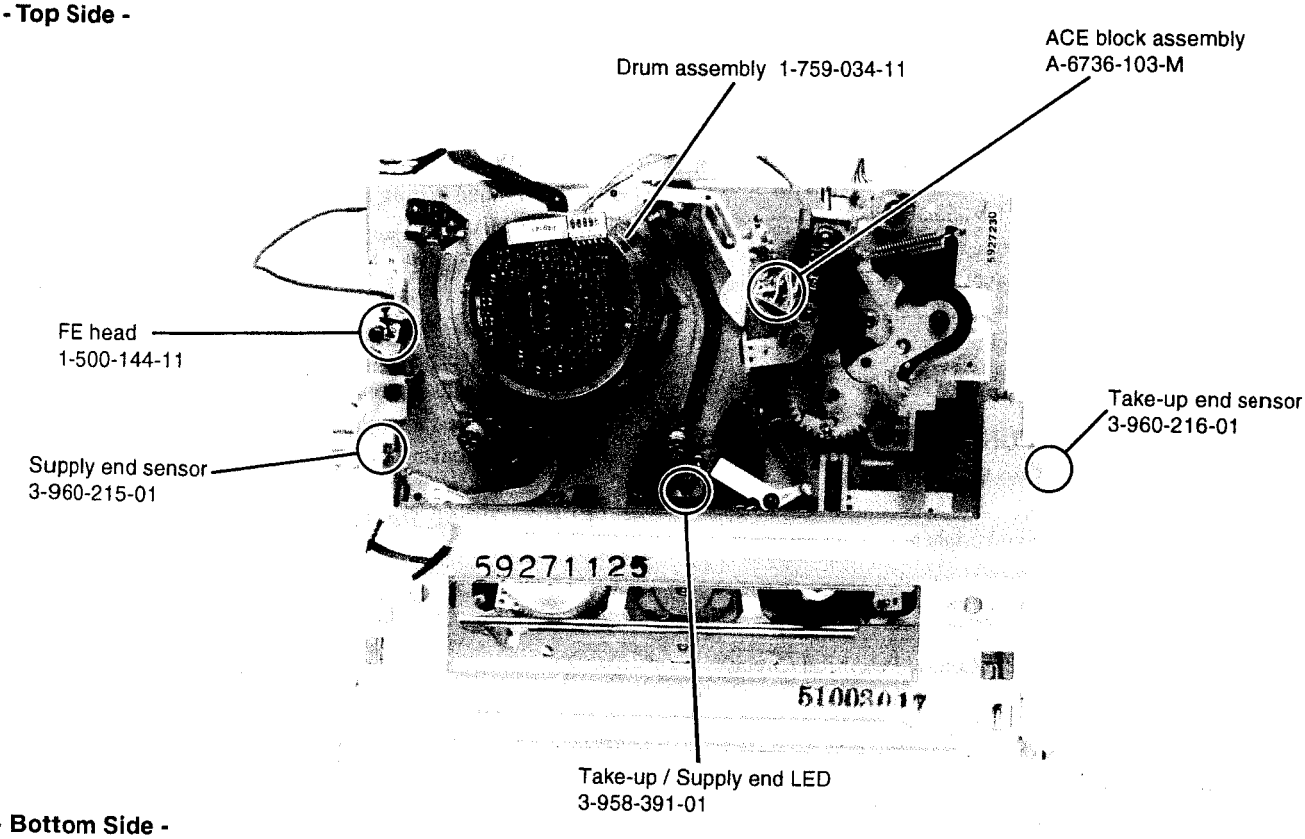




SECTION 1
GENERAL

1-1. INTERNAL VIEWS

- Top Side -



- Bottom Side -

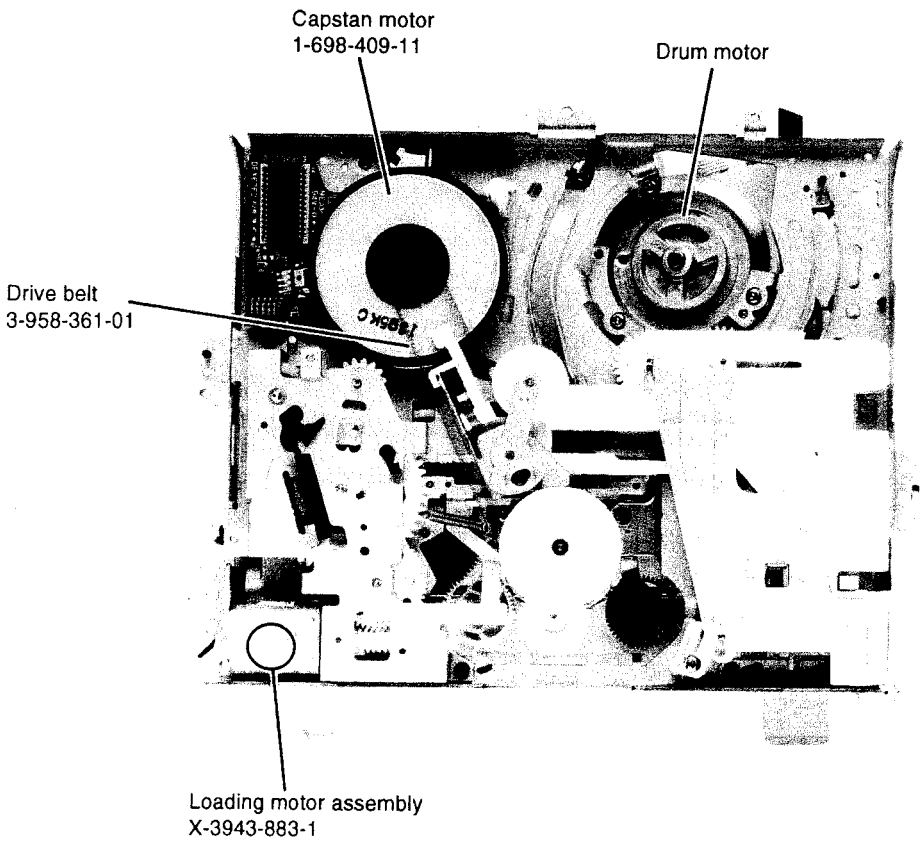


TABLE OF CONTENTS

Section	Title	Page
VIDEO SECTION		
1. GENERAL		
1-1.	Internal Views	42
2. CIRCUIT ADJUSTMENTS		43
2-1.	MA Board Adjustment	44
2-2.	Servo System Adjustment	45
2-3.	Audio System Adjustments	45
2-4.	Rec Chroma Adjustment	45
2-5.	Secam Det Adjustment and Check	46
3. INTERFACE, IC PIN FUNCTION DESCRIPTION		
3-1.	System Control-Video Block Interface (MA Board IC501)	47
3-2.	System Control-Servo Peripheral Circuit Interface (MA Board IC501)	48
3-3.	System Control-Mechanism Block Interface (MA Board IC501)	49
3-4.	System Control-System Control Peripheral Circuit Interface (MA Board IC501)	50
3-5.	System Control-Audio Block Interface (MA Board IC501)	50
3-6.	System Control-RF Modulator, Input Selection Block Interface (MA Board IC501)	50
3-7.	Servo/System Control Micro Processor (MA Board IC501) Port Function Description	51
4. DIAGRAMS		
4-1.	Block Diagram	53
4-2.	Circuit Boards Location	56
4-3.	Printed Wiring Boards and Schematic Diagrams	56
	• MA Board	57
4-4.	Semiconductors	69
5. EXPLODED VIEWS		
5-3.	Mechanism Deck Assembly (1)	73
5-4.	Mechanism Deck Assembly (2)	74
5-5.	Mechanism Deck Assembly (3)	75
5-6.	Mechanism Deck Assembly (4)	76
6. ELECTRICAL PARTS LIST		85

SECTION 2
CIRCUIT ADJUSTMENTS

Necessary items and indications for total adjustment of electric circuit of this unit will be described in this chapter.

[Instruments to be Used]

1) Color TV
2) Signal or dual trace type oscilloscope, band more than 30 MHz, delay, as provided.
3) Frequency counter (4 digits or more)
4) PAL pattern generater
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Distortion meter
10) Alignment tape
    Part code : H7099052H (MH-2)

[Connection]

Unless otherwise specified, connect and adjust the measurement equipment as follows.

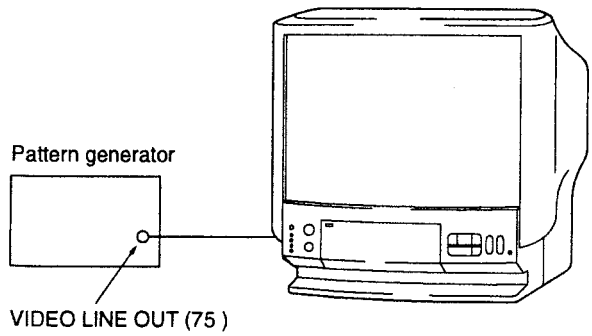


Fig. 2-1.

[Set-up for adjustment]

The video signal from the pattern generator is used as adjustment signal for electrical adjustment. This video signal should meet the requirement. Connect the oscilloscpe to the video input terminal on the MF 1 board and make sure that the amplitudes of sync signal of video signal, video portion and burst signal are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst signal and "red siganl" are 0.30 : 0.66, Fig. 2-2. shows video signals (color bars) used in adjusting the electrical adjustment.

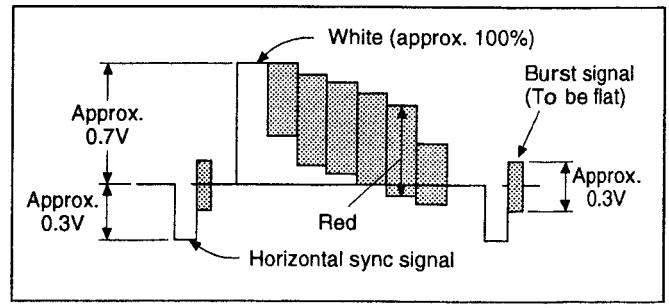


Fig. 2-2

Alignment Tape (MH-2)

	Time	Video signal	Audio signal
1	10 minutes	Starir-step	6 kHz
2	5 minutes	–	3 kHz
3	10 minutes	Color bar	1 kHz
4	3 minutes	RF sweep	–

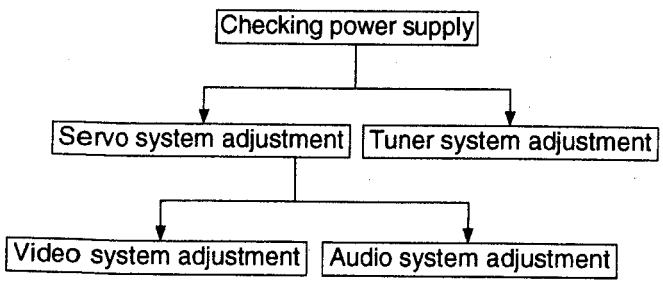
[Specified Input/Output Level Impedance]

Input/Output terminal

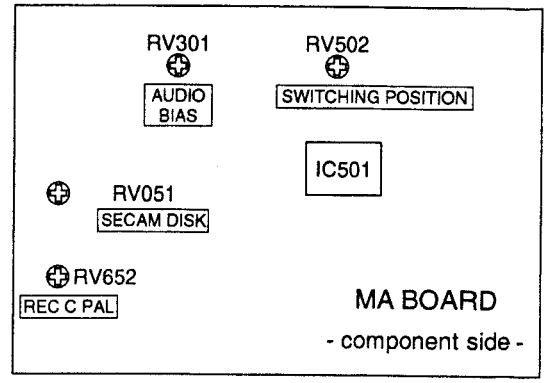
Video input	Pin jack
	Input signal : 1Vp-p, 75Ω, unbalanced Sync negative
VIDEO LINE OUT	Pin jack
	Output siganl : 1Vp-p, 75Ω, unbalanced Sync negative
AUDIO LINE IN	Pin jack
	Input level : -7.5dBs (0dBs=0.775Vrms)
	Input impedance : More than 47kΩ
AUDIO LINE OUT	Pin jack
	Specified output : -7.5dBs At 47kΩ loaded.
	Load impedance : More than 10kΩ

[Adjustment Sequence]

Make the electrical adjustment in the following sequences.



2-1. MA BOARD ADJUSTMENT



1. Recording bias adjustment

Mode	Recording and playback (SP mode)
Signal	400Hz, -27.5dBs 7kHz, -27.5dBs
Measurement Equipment	Audio level meter
Adjustment Element	RV301
Specified Value	0 ± 2dB

Note : Tape path adjustment should have been completed.

1) Input signal of 400Hz, -27.5dBs.
2) Make recording.
3) Set the AUDIO LINE IN signal to 7kHz, -27.5dBs and make recording.
4) Playback a recorded portion and measure output levels at 400Hz and 7kHz.
5) Confirm that the 7kHz playback signal level is within a range of 0 ± 2dB against the 400Hz playback signal level. When beyond this range, adjust RV301 and repeat the step (1) through (5).

2-2. SERVO SYSTEM ADJUSTMENT

Switching position adjustment (MA board)

Mode	Playback
Siganl	Alignment tape, Stair step
Measurement Point	CH : Pin ⑫ of CN802 (MA) CH : Pin ④ of CN801 (MA)
Measurement Equipment	Oscilloscpe
Adjustment Element	RV502
Specified Value	416 ± 32μsec (6.5 ± 0.5H)

Adjustment Method :

1) Press the tracking buttons ▼ and ▲ at a time.
2) Adjust for 416 ± 32μsec (6.5 ± 0.5) using RV502.

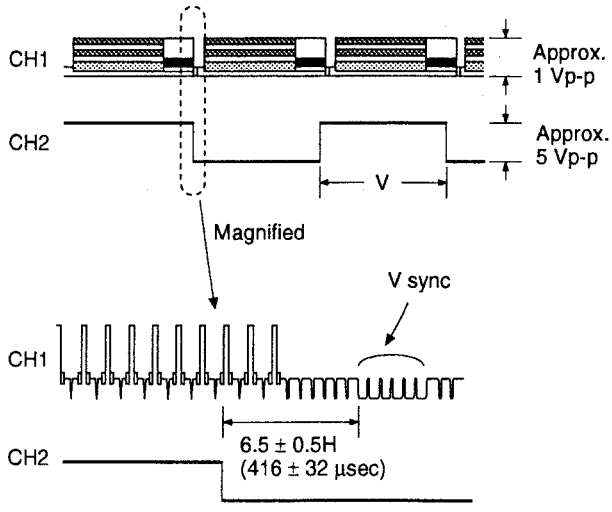


Fig. 2-3 Switching position adjustment

2-3. AUDIO SYSTEM ADJUSTMENTS

[Connection]

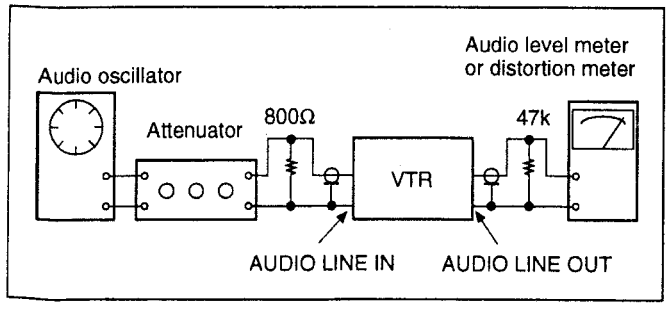


Fig. 2-4.

•Make adjustment in the SP mode.

[Adjustment Spquences]

1) ACE head adjustment
   ... See " VHS MECHANICAL ADJUSTMENTMANUAL MANUAL Ⅳ ".
2) Playback output level check.

1. ACE head adjustment

See " VHS MECHANICAL ADJUSTMENTMANUAL MANUAL Ⅳ ".

2. Playback output level check

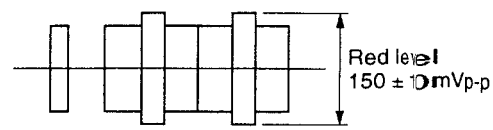
Mode	Playback
Siganl	Alignment tape, 1 kHz (color bar) portion
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Specified Value	-7.5 ± 2 dBs

Confirmation Method :

1) Playback 1kHz portion and make sure that AUDIO LINE OUT signal level is -7.5 ± 2dBs.

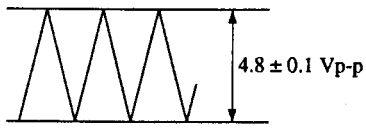
2-4. REC CHROMA ADJUSTMENT

1) Input the PAL COLOUR BAR signal (2Vp-p).
2) Connect Oscilloscope to JL022.
3) Adjust for 150 ± 10mVp-p (Red level) using RV652 (EE mode).



2-5. SECAM DET ADJUSTMENT AND CHECK

1) Input the SECAM COLOR BAR Signal.
2) Connect Oscilloscope To pin⑪ of IC051.
3) Adjust for 4.8±0.1Vp-p using RV051 (REC/PB Mode).



3-1. SYSTEM CONTROL-VIDEO BLOCK INTERFACE (MA BOARD IC501)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREADING	TAPE UNTHREADING	PB	PB · PAUSE	SLOW	X2	PICTURE SEARCH CUE	PICTURE SEARCH REVIEW	REC	REC · PAUSE
$\overline{\text{V-PB}}$	IC501 ㉟	O	H	H	H	H	H	L	L	L	L	L	L	H	H
RF SW P (SW25)	IC501 ①	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
Q VD/V MUTE	IC501 ②	O	L	L	L	L	L	*2	*3	*3	*3	*3	*3	L	L
$\overline{\text{NA-SP}}$	IC501 ㉛	O	*4	*4	*4	*4	*4	*5	*5	*5	*5	*5	*5	*4	*4
LP	IC501 ⑫	O	*8	*8	*8	*8	*8	*5	*5	*5	*5	*5	*5	*8	*8
REC-P	IC501 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	L	H
REC	IC501 ㊱	O	L	L	L	L	L	L	L	L	L	L	L	H	H
V SYNC	IC501 ㊽	I	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
OSD MUTE	IC501 ㉑	O	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
CTL REC	IC501 ㉔	O	L	L	L	L	L	L	L	L	L	L	L	H	L
$\overline{\text{NTSC}}$	IC501 ㉗	O	L	L	L	L	L	L	L	L	L	L	L	L	L
JOG	IC501 ㉗	O	L	L	L	L	L	L	H	H	H	H	H	L	L
CRC SETTEI	IC501 ㉖	O	L	L	L	L	L	L	L	L	L	L	L	*9	*9

*1. 25Hz 50% duty pulse synchronizing with drum rotation.
*2. Normally "L". "H" when the video signal is not detected.
*3. V period "H" pulse.
*4. "L" in the SP mode. Selected according to the recording mode.
*5. Selected according to the tape recording mode.
*6. Composite sync signal (positive).
*7. "H" when menu screen or gray back screen.
*8. Selected by REC mode, "L" in the SP mode.
*9. "H" while APC is set.

Mode / Signal	SP	LP	EP
$\overline{\text{SP}}$ ㉛	L	H	H
LP ㉜	L	L	H

3-2. SYSTEM CONTROL-SERVO PERIPHERAL CIRCUIT INTERFACE (MA BOARD IC501)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREADING	TAPE UNTHREADING	PB	PB · PAUSE	SLOW	X2	PICTURE SEARCH CUE	PICTURE SEARCH REVIEW	REC	REC · PAUSE	PB INDEX WRT/ERS
REC CTL	IC501 ⑦	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	
$\overline{\text{CAP STOP}}$	IC501 ㊳	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	*3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	
STEP PLS	IC501 ㉔	O	L	L	L	L	L	L	L	*2	L	L	L	L	L	
CTL REC	IC501 ㊹	O	L	L	L	L	L	L	L	L	L	L	L	H	L	H
CTL INDEX	IC501 ㊻	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
PB CTL	IC501 ㊼	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H	
DRUM PG	IC501 ㊽	I	*4	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7	
DRUM FG	IC501 ㊾	I	*4	*8	*8	*5	*5	*8	*8	*8	*8	*8	*8	*8	*8	
CAP FG	IC501 ㊿	I	H/L	*6	*6	*5	*5	*6	H/L	*9	*6	*6	*6	*6	H/L	
CAP DA	IC501 ㊸	O	*10	*10	*10	*10	*10	*11	*10	*10	*11	*11	*11	*11	*10	
DRUM DA	IC501 ㊹	O	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	
CTL STEP	IC501 ㊸	O	L	L	L	L	L	L	L	*13	L	L	L	L	L	

*1. 25Hz pulse.
*2. Pulse in tape running.
*3. Reverse logic pulse of STEP PLS.
*4. "L" when drum rotation stops.
*5. Unstable period pulse.
*6. Pulse of period proportionate to tape speed.
*7. 25Hz pulse.
*8. 300Hz pulse.
*9. Pulse in tape running.
*10. Approx. 2 msec. period "H" or "L" pulse.
*11. Approx. 1.5 msec. period "H" or "L" pulse.
*12. Approx. 3 msec. period "H" or "L" pulse.
*13. "H" in FWD direction and STEP drive.

3-3. SYSTEM CONTROL-MECHANISM BLOCK INTERFACE (MA BOARD IC501)

Signal	Pin No.	I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TAPE THREADING	TAPE UNTHREADING	STOP	FF	REW	PB	PB · PAUSE	SLOW	X2	PICTURE SEARCH CUE	PICTURE SEARCH REVIEW	REC	REC · PAUSE
CAM LOAD	IC501 ⑬	O	L	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L
CAM UNLOAD	IC501 ⑭	O	L	L	H	L	H	L	L	L	L	L	L	L	L	L	L	L
CAM 12V	IC501 ㉛	O		H	L	H	L											
MODE 1	IC501 ㊽	I	H	L	L	*1	*1	H	H	H	H	H	H	H	H	L	H	H
MODE 2	IC501 ㊼	I	L	L	L	*1	*1	L	L	L	H	H	H	H	H	H	H	H
MODE 3	IC501 ㊻	I	L	L	L	*1	*1	H	H	H	L	H	H	L	L	H	L	H
MODE 4	IC501 ㊺	I	L	H	H	*1	*1	H	L	L	L	L	L	L	L	L	L	L
REC PRF	IC501 ⑮	I	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
T REEL FG	IC501 ㊹	I	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL FG	IC501 ㊸	I	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
END LED	IC501 ㉜	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP TRQ 1	IC501 ㉞	O (O.D)											*1					
CAP TRQ 2	IC501 ㉝	O (O.D)										L	*1					L
CAP TRQ 3	IC501 ⑧	O (O.D)							H	H			*1		H	H		
$\overline{\text{CAP STOP}}$	IC501 ㊳	O (O.D)	L	L	L	H	H	L	H	H	H	L	*5	H	H	H	H	L
CAP RVS	IC501 ⑫	O	H			L	H	H/L	L	H	L	L	L/*5	L	L	H	L	L
CAP DA	IC501 ⑬	O																
T SENS	IC501 ⑰	I	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	IC501 ⑱	I	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. Uncertainty
*2. "L" when the erasing protection tab is bent,"H" when not bent.
*3. Pulse of period proportionate to reel rotationg speed.
*4. Approx. 2 msec. period "H" pulse.
*5. Pulse in tape running.
*6. "L" only in tape running and when CAP RVS is "H".
*7. Nomally "L". 2 msec. poriod "H" pulse when tape top or tape end is detected.

3-4. SYSTEM CONTROL-SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA BOARD IC501)

Signal	Pin No.	I/O	I/O Level
$\overline{\text{ASURA RESET}}$	IC501 ㊵	I	Normally "H"."L" when service interruption is detected or restored.
$\overline{\text{ASURA CS}}$	IC501 ㊹	I	Chip select signal from the timer microprocessor.V period "L" pulse.
SI BUS	IC501 ㊺	I	Serial communication data from the timer microprocessor.V period "L" pulse.
SO BUS	IC501 ㊻	O	Serial communication data to the timer microprocessor.V period "L" pulse.
S CLK	IC501 ㊼	I	Serial communication clock with the timer microprocessor.V period "L" pulse.

3-5. SYSTEM CONTROL-AUDIO BLOCK INTERFACE (MA BOARD IC501)

	Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREADING	TAPE UNTHREADING	PB	PB · PAUSE	SLOW	X2	PICTURE SEARCH CUE	PICTURE SEARCH REVIEW	REC	REC · PAUSE
	AF ENVELOP	IC501 ㊶	I	AF RF envelope signal input pin for auto tracking.												
	NA PB	IC501 ㊸	O	L	L	L	L	L	H	H	H	H	H	H	L	L
	A MUTE	IC501 ㊲	O (O.D)	L	L	L	L	L	*1	H	H	H	H	H	L	L
	$\overline{\text{NA SP}}$	IC501 ㊶	O	*2	*2	*2	*2	*2	*3	*3	*3	*3	*3	*2	*2	*2
	NA REC.$\overline{\text{P}}$	IC501 ⑪	O	L	L	L	L	L	L	L	L	L	L	L	H	L
*4	AF REC.$\overline{\text{P}}$	IC501 ④	O	L	L	L	L	L	L	L	L	L	L	L	H	L
*4	AF SWP	IC501 ⑩	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
	AF SW POSITION	IC501 ㊶	I	Input pin for AF switching position adjustment.												
*4	$\overline{\text{FULL ERS}}$	IC501 ㊱	O (O.D)	H	H	H	H	H	H	H	H	H	H	H	L	H

*1. 25Hz 50% duty pulse approximately 5 msec. delayed from RF SW P.
*2. Selected according to SP/LP selector. "L" in the SP mode, "H" in the LP mode.
*3. Selected according to the tape recording mode. "L" in the SP mode, "H" in the LP mode.
*4. Not used.

3-6. SYSTEM CONTROL-RF MODULATOR, INPUT SELECTION BLOCK INTERFACE (MA BOARD IC501)

	Signal	Pin No.	I/O	I/O Level TUNER	I/O Level LINE 1	I/O Level LINE 2
	LINE 1	IC501 ㊾	O	L	H	L
*1	LINE 2	IC501 ㊷	O	L	L	H

*1. Not used.

3-7. SERVO/SYSTEM CONTROL MICROPROCESSOR (MA BOARD IC501) PORT FUNCTION DESCRIPTION

Pin No.	Signal	I/O	Function
1	RF SWP	O	RF switching pulse.
2	QVD	O	False VD.
3	QHD ENBL	O	False HD voltage level control.
4	AF REC P	O	Hi-Fi recording control. (Not used. (open))
5	REC P	O	Recording signal.
6	FE ON	O	Flying erase. (Not used. (open))
7	REC CTL	I/O	REC CTL.
8	CAP TRQ3	O	Capstan current control.
*1 9	RENTAL	I/O	H : poor tape.
10	EDIT	O	EDIT control. (Not used. (open))
11	NA REC P	I/O	Normal audio recording mode. H : recording mode.
12	LP	O	H in LP mode.
13	CAMLOAD	I/O	
14	CAMUNLOAD	I/O	Loading motor rotaing direction control.
15	C IN/REC PRF	O	Cassette IN and erasing protection tad detection switch input.
16	HEAD CONT	I/O	Head change control.
17	T SENS	I	Tape top sensor input.
18	S SENS	I	Tape end sensor input.
19	MOD CONT	O	Modulator power supply ON/OFF control. (Not used. (open))
20	AV CONT	O	ON/OFF control. (Not used. (open))
21	ME SECAM	I/O	H : ME SECAM (Not used. (open))
22	SECAM	I/O	H : SECAM (Not used. (open))
23	VPB	O	Reverse VPB, H : P-OFF. (Not used. (open))
24	STEP PLS	O	Step pulse, H : Capstan step driving.
25	PAL 60	O	H : HTSC on PAL TV.
26	3.58 NTSC	O	Tuner 'audio selection signal. H : 3.58 XTAL.
27	NTSC	O	H : PAL.
28	E TAPE	O	H : HG tape. (Not used. (open))
29	BIL	O	H output : BS bilingual mode. (Not used. (open))
30	C+CONT	O	CANAL + control. (Not used. (open))
31	CAM 12V	O	CAM motor voltage change.
32	END LED	O	Top/end detection lamp lighting control.
33	CAP TRQ 2	O	Capstan current control signal 2. L : FF/REW to STOP.
34	CAP TRQ 1	O	Capstan current control signal 1. L : SLOW speed down.

Pin No.	Signal	I/O	Function
35	PAL	O	H : PAL (Not used. (open))
36	FULL ERS	O	Full erase control. (Not used. (open))
37	A MUTE	O	Audio mute. H : mute.
38	CAP STOP	O	Capstan stop reversal. L : Capstan stop.
39	MP	I	Fixed to L.
40	ASURA RESET	I	System reset input.
41	VSS		GND.
42	XTAL		
43	EXTAL		System clock 16MHz.
44	ASURA CS	I	Chip select signal.
45	SI BUS	I	
46	SO BUS	O	Serial communication signal.
47	S CLK	I	
48	DEST 2	I	Destination judge input. Fixed to L.
49	AD	I	AD input for APC 2.
50	NTPB-SW	I	358/443/onpal input.
51	AFSW POS	I	Hi-Fi switching position adjustment.
52	A VSS		GND.
53	A VREF		AD port reference input. (UNSW 5V)
54	A VDD		UNSW 5V.
55	MODE 4	I	Cam encorder data 4.
56	MODE 3	I	Cam encorder data 3.
57	MODE 2	I	Cam encorder data 2.
58	MODE 1	I	Cam encorder data 1.
59	DEW	I	Condensation sensor input. "H" when condensation.
60	RF ENV	I	Video playback signal envelope.
61	AF ENV	I	Hi-Fi audio playback signal envelope.
62	RF SW POS	I	Video head switching position adjustment.
63	S REEL FG	I	S side reel FG input.
64	T REEL FG	I	T side reel FG input.
65	NT JUDGE	I	4.43/3.58 judge input.
66	V SYNC	I	Composite sync input.
67	PB CTL	I	Servo CTL input.
68	DRM PG	I	Drum PG input.

Continued on next page.

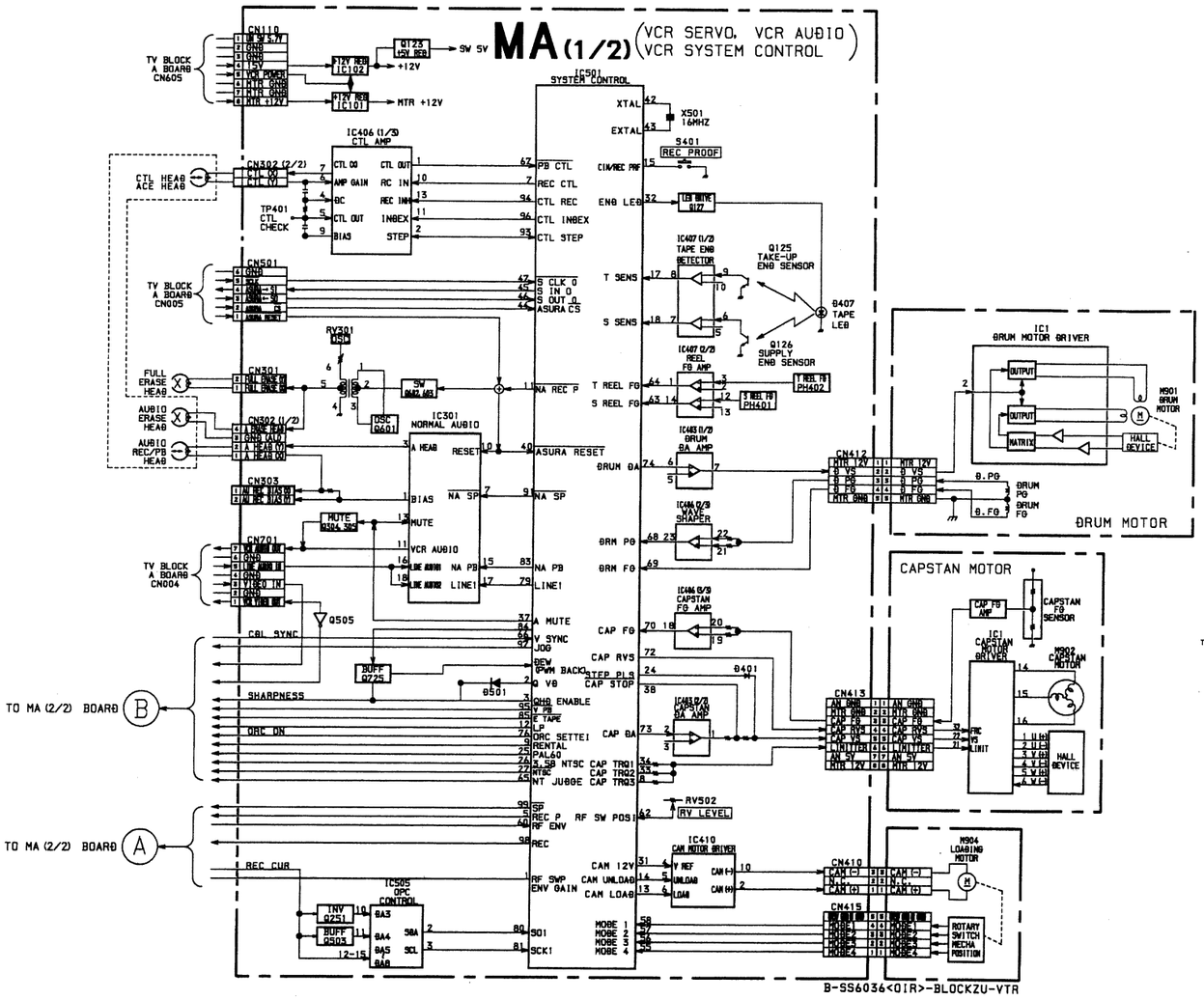
Pin No.	Signal	I/O	Function
69	$\overline{\text{DRM FG}}$	I	Drum FG input.
70	CAP FG	I	Capstan FG input.
71	OSD MUTE	O	Video output mute signal. H : Gray back. (Not used. (open))
72	CAP RVS	O	Capstan reverse control. H : Reverse.
73	$\overline{\text{CAP DA}}$	O	Capstan D/A output.
74	$\overline{\text{DRM DA}}$	O	Drum D/A output.
75	$\overline{\text{EP}}$	O	L : EP (Not used. (open))
76	ORC SETTEI	O	H : ORC measure.
77	VD CTL	I	CTL counter input. (Fixed to "H".)
78	DEST 1	I	Destination judge input.
79	LINE 1	O	Input selection control signal.
80	SO 1	I/O	Expanded port data.
81	CLK 1	I/O	Expanded port clock.
82	LINE 2	O	Input selection control signal. (Not used. (open))
83	NAPB	O	Audio output control signal. H : Normal audio playback.
84	PWM	O	PWM output for APC2. (Not used. (open))
*1 85	$\overline{\text{E TAPE}}$	O	L : Good tape.
86	N.C.	I	Not used. (open)
87	TX		Not used. (open)
88	VSS		GND.
89	VDD		UNSW 5V.
90	VDD		UNSW 5V.
91	NA SP	O	For normal audio. L : SP mode.
92	ENV GAIN	O	Video envelope gain change.
93	CTL STEP	O	CTL amp, STEP operation control.
94	CTL REC	O	H : CTL write.
95	$\overline{\text{V PB}}$	O	Video system playback mode reversal. L : Playback.
96	CTL INDEX	O	Index control signal rewrite. H : Erase.
97	JOG	O	H : JOG
98	REC	O	Head amplifier recording power supply.
99	$\overline{\text{SP}}$	O	L : SP mode.
100	$\overline{\text{AF SWP}}$	O	AF switching pulse. (Not used. (open))

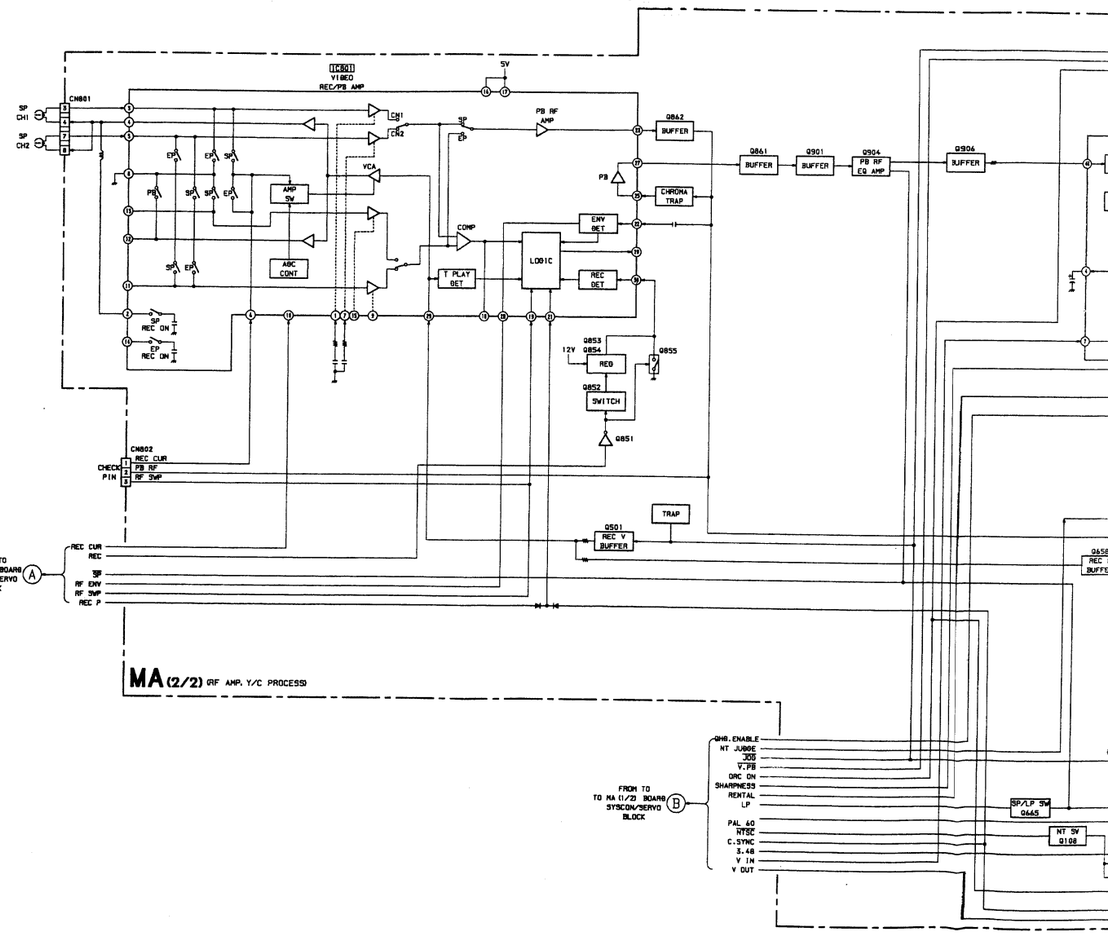
*1. Selected by tape condition.

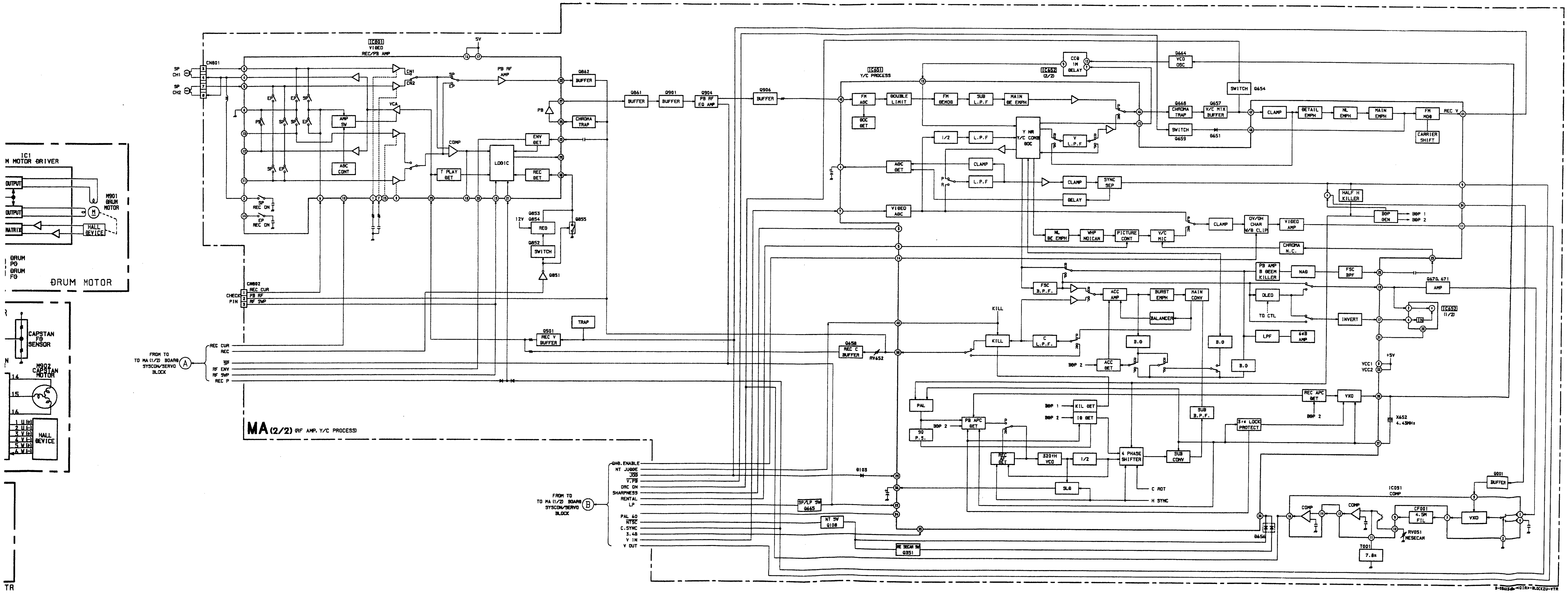
signal \ tape	good	normal	poor
RENTAL ⑨	L	L	H
$\overline{\text{E TAPE}}$ ⑧⑤	L	H	H

SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM

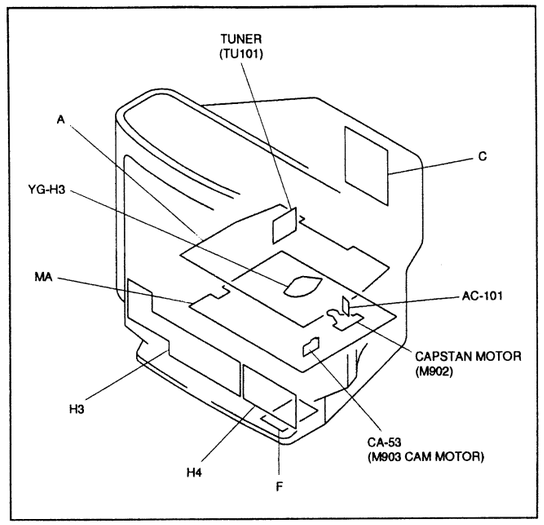






IC1
M MOTOR DRIVER
OUTPUT
MATRIX
M901 DRUM MOTOR
HALL DEVICE
DRUM MOTOR
CAPSTAN FG SENSOR
M902 CAPSTAN MOTOR
IC801 VIDEO REC/PB AMP
CN801
SP CH1
SP CH2
PB RF AMP
AMP SW
AGC CONT
COMP
LOGIC
T PLAY DET
ENV DET
REC DET
CHROMA TRAP
BUFFER
Q861 BUFFER
Q901 BUFFER
Q904 PB RF EQ AMP
Q906 BUFFER
CN802
CHECK PIN
Q853
Q854
REG
Q852
SWITCH
Q851
Q855
Q501 REC V BUFFER
TRAP
FROM TO
TO MA (1/2) BOARD SYSCON/SERVO BLOCK
MA (2/2) (RF AMP, Y/C PROCESS)
IC651 Y/C PROCESS
IC652 (2/2)
FM AGC
DOUBLE LIMIT
DOC DET
FM DEMOD
SUB L.P.F
MAIN DE EMPH
CCD 1H DELAY
VCO OSC
SWITCH
CHROMA TRAP
Y/C MIX BUFFER
CLAMP
DETAIL EMPH
NL EMPH
MAIN EMPH
FM MOD
CARRIER SHIFT
Y NR Y/C COMB DOC
1/2
L.P.F
AGC DET
VIDEO AGC
SYNC SEP
DELAY
HALF H KILLER
DOP GEN
VIDEO AMP
NL DE EMPH
WHP NOICAN
PICTURE CONT
Y/C MIC
CHROMA N.C.
PB AMP B DEEM KILLER
FSC BPF
FSC B.P.F.
ACC AMP
BURST EMPH
MAIN CONV
BALANCER
KILL
C L.P.F.
ACC DET
LPF
INVERT
Q658 REC C BUFFER
RV652
PAL
KIL DET
ID DET
PB APC DET
SUB B.P.F.
REC APC DET
VXO
X652 4.43MHz
320fH VCO
4 PHASE SHIFTER
SUB CONV
SLD
C ROT
H SYNC
SP/LP SW Q665
NT SW Q108
ME SECAM SW Q351
IC051 COMP
CF001 4.5M FIL
RV051 MESECAM
T001 7.8k
Q001 BUFFER

4-2. CIRCUIT BOARDS LOCATION



4-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power: 1/4W

- 1/4W in resistance, 1/10W and 1/8W in chip resistance.
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
- Readings are taken with a 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
  * : Measurement impossibillity.
- : B + line.
- : B – line.
  (Actual measured value may be different).
- : signal path. (RF)
- Circled numbers are waveform reference.
- Measurement mode.
  no mark : REC/PB mode
  ( ) : REC mode

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The symbol display is on the component side.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

The symbol indicate fast operating fuse. Replace only with fuse of same rating as marked.

Note: Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Le symbole indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme maque.

MA BOARD

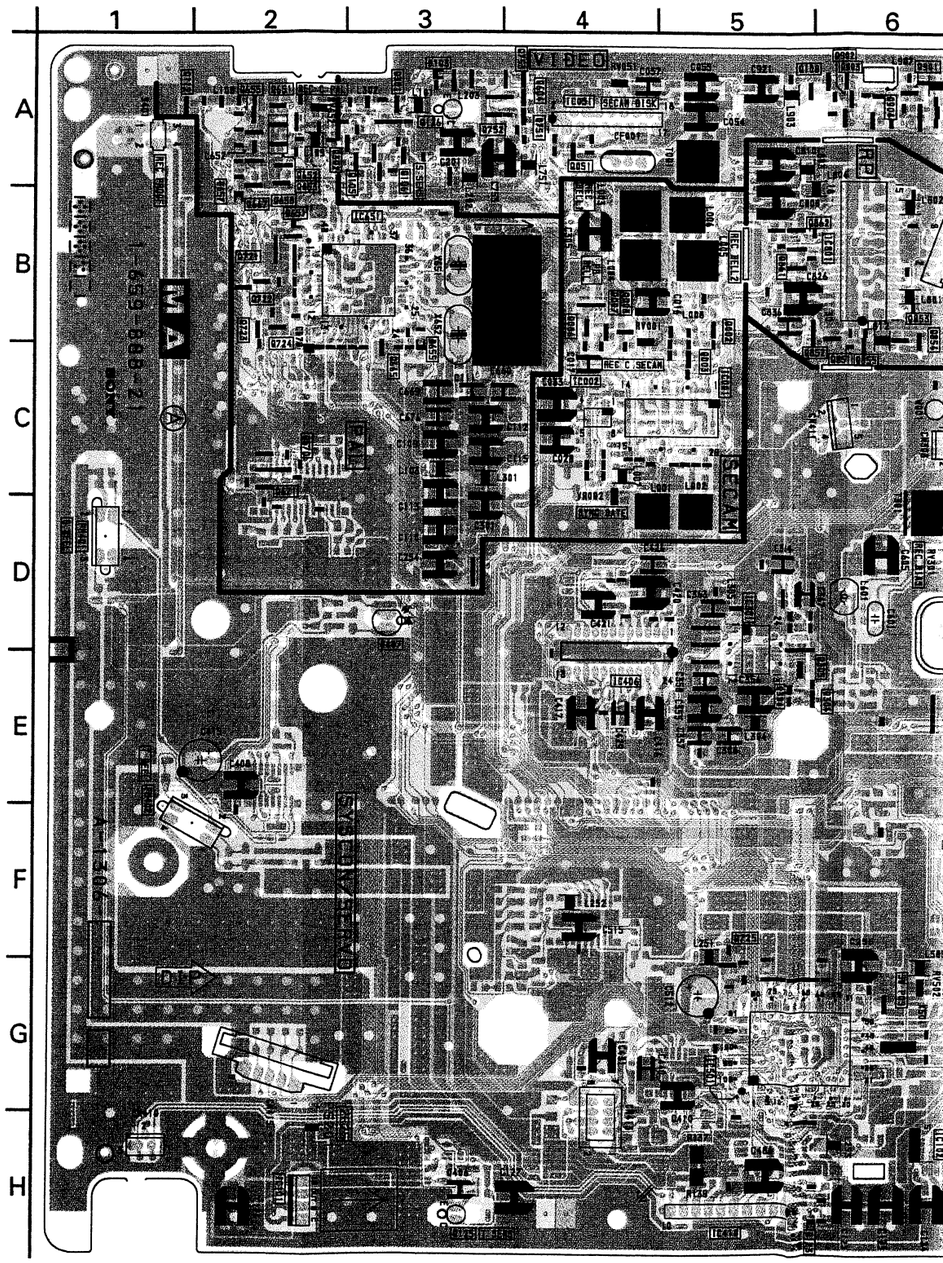
IC	
IC051	A-4
IC101	H-2
IC102	H-6
IC301	D-5
IC403	G-9
IC406	E-4
IC407	E-12
IC410	H-5
IC501	G-5
IC505	F-10
IC651	B-3
IC652	C-12
IC801	B-6

TRANSISTOR	
Q051	A-4
Q052	A-9
Q108	A-5
Q110	A-11
Q112	A-1
Q123	H-8
Q125	H-3
Q126	A-3
Q127	D-11
Q201	A-10
Q251	G-10
Q304	E-6
Q305	E-5
Q351	A-9
Q503	F-10
Q505	F-10
Q601	D-8
Q602	E-8
Q603	E-8
Q653	A-2
Q654	B-11
Q655	A-2
Q656	A-12
Q657	B-11
Q658	A-2
Q659	A-12
Q664	B-11
Q665	C-3
Q667	B-2
Q668	B-11
Q670	C-2
Q671	C-2
Q721	B-2
Q722	B-2
Q723	B-2
Q724	B-2
Q725	F-5
Q851	B-6
Q852	B-5
Q853	B-6
Q854	C-6
Q855	C-6
Q861	B-5
Q862	B-5
Q901	A-6
Q904	A-6
Q905	A-9
Q906	A-8
Q907	A-9

DIODE	
D103	A-3
D122	H-8
D123	H-6
D304	E-5
D401	G-9
D402	G-10
D405	D-13
D406	E-12
D407	D-3
D408	H-9
D410	H-8
D501	H-8
D502	G-9
D503	H-8
D651	B-2
D653	B-11
D655	C-3
D656	B-11
D657	B-2
D802	B-9
D804	B-9

ADJUSTING ELEMENT	
RV051	A-4
RV301	D-6
RV502	G-6
RV652	A-2

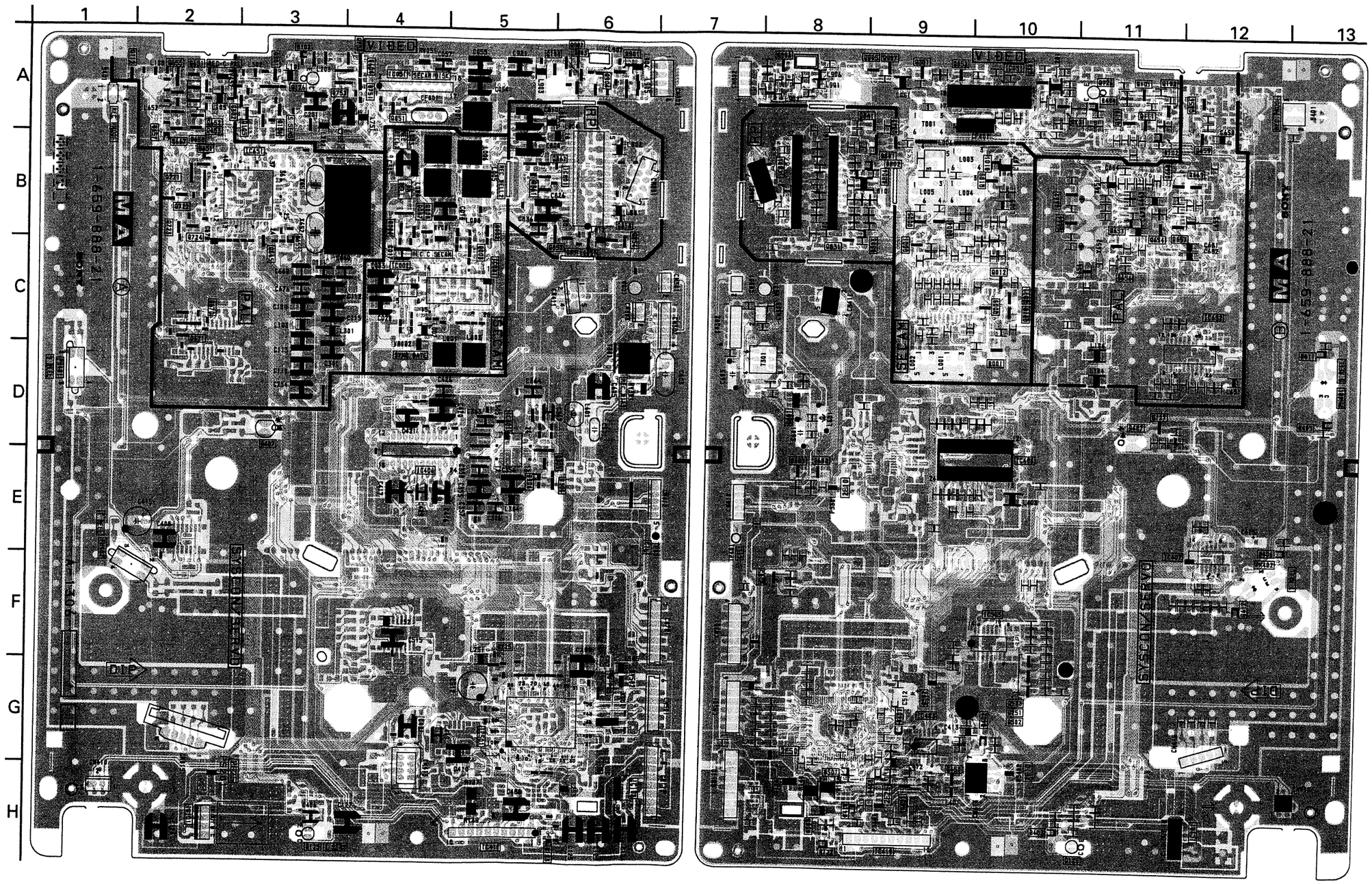
– **MA BOARD** – <Component Side>



MA [HEAD AMP, SERVO/SYSTEM CONTROL, NORMAL AUDIO, Y/C PROCESS]

– MA BOARD – <Component Side>

<Conductor Side>



MA BOARD

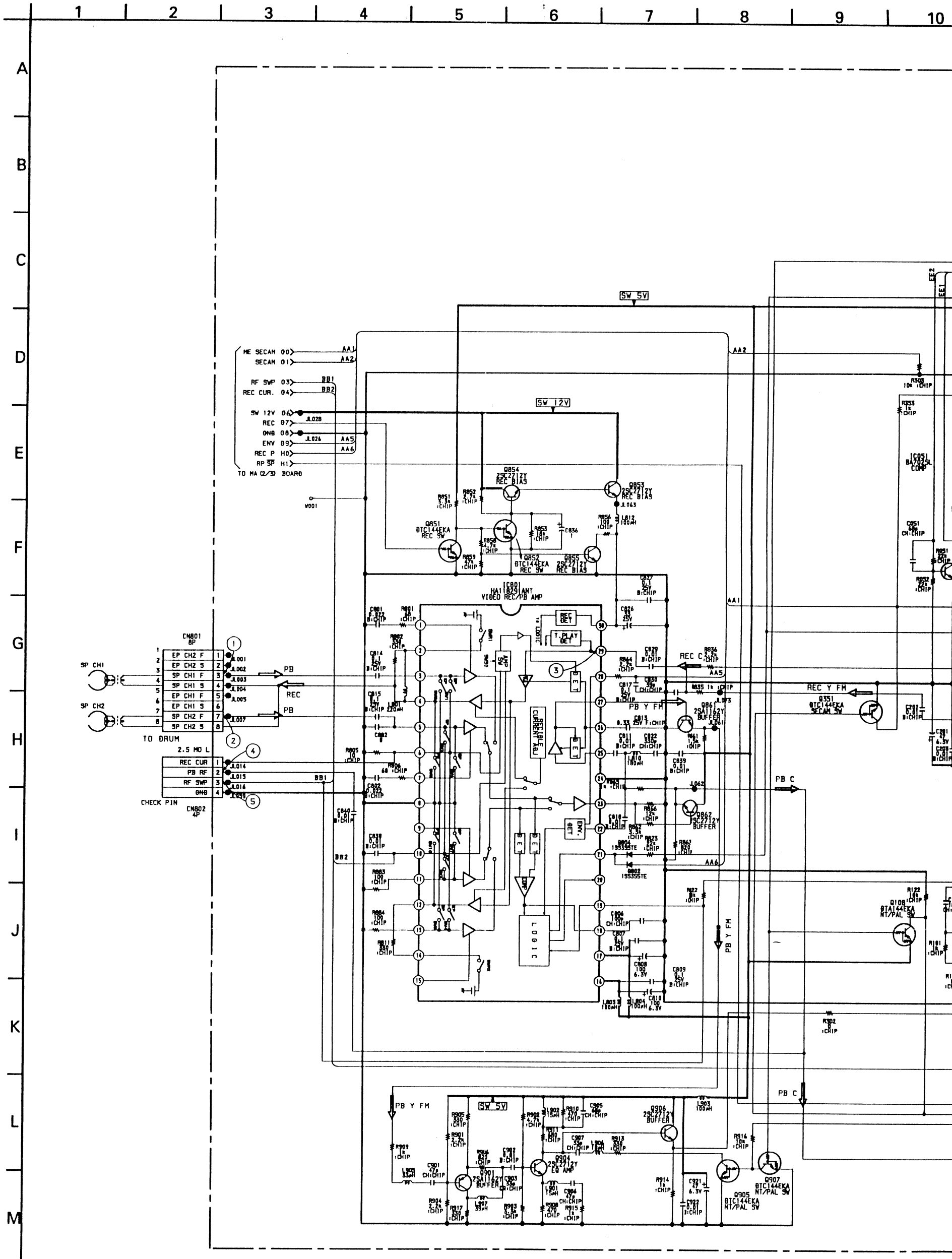
IC	
IC051	A-4
IC101	H-2
IC102	H-6
IC301	D-5
IC403	G-9
IC406	E-4
IC407	E-12
IC410	H-5
IC501	G-5
IC505	F-10
IC651	B-3
IC652	C-12
IC801	B-6

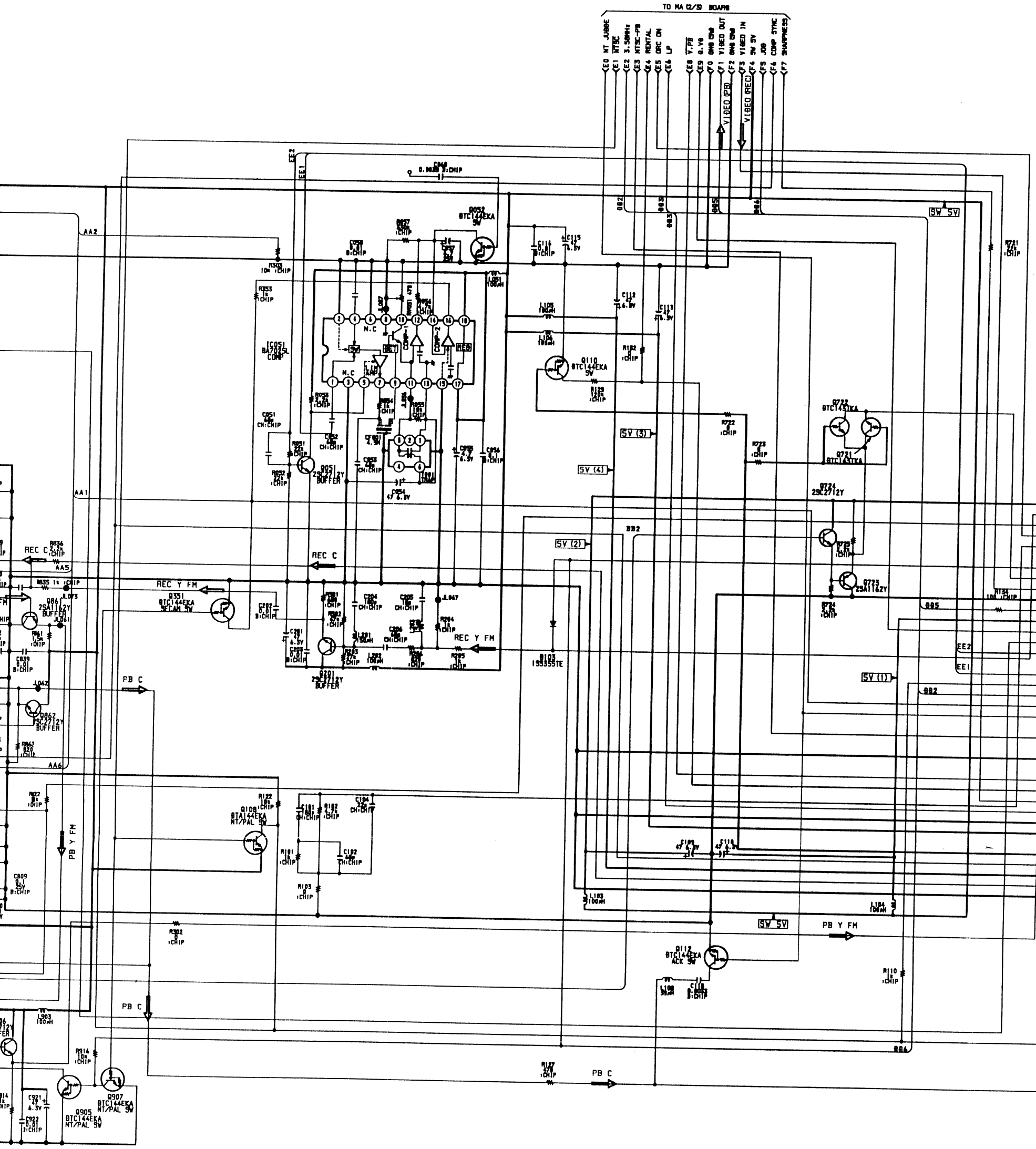
TRANSISTOR	
Q051	A-4
Q052	A-9
Q108	A-5
Q110	A-11
Q112	A-1
Q123	H-8
Q125	H-3
Q126	A-3
Q127	D-11
Q201	A-10
Q251	G-10
Q304	E-6
Q305	E-5
Q351	A-9
Q503	F-10
Q505	F-10
Q601	D-8
Q602	E-8
Q603	E-8
Q653	A-2
Q654	B-11
Q655	A-2
Q656	A-12
Q657	B-11
Q658	A-2
Q659	A-12
Q664	B-11
Q665	C-3
Q667	B-2
Q668	B-11
Q670	C-2
Q671	C-2
Q721	B-2
Q722	B-2
Q723	B-2
Q724	B-2
Q725	F-5
Q851	B-6
Q852	B-5
Q853	B-6
Q854	C-6
Q855	C-6
Q861	B-5
Q862	B-5
Q901	A-6
Q904	A-6
Q905	A-9
Q906	A-8
Q907	A-9

DIODE	
D103	A-3
D122	H-8
D123	H-6
D304	E-5
D401	G-9
D402	G-10
D405	D-13
D406	E-12
D407	D-3
D408	H-9
D410	H-8
D501	H-8
D502	G-9
D503	H-8
D651	B-2
D653	B-11
D655	C-3
D656	B-11
D657	B-2
D802	B-9
D804	B-9

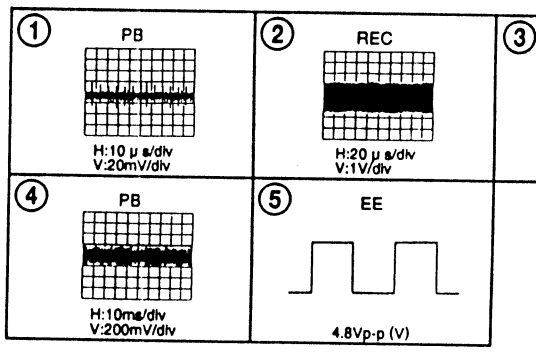
ADJUSTING ELEMENT	
RV051	A-4
RV301	D-6
RV502	G-6
RV652	A-2

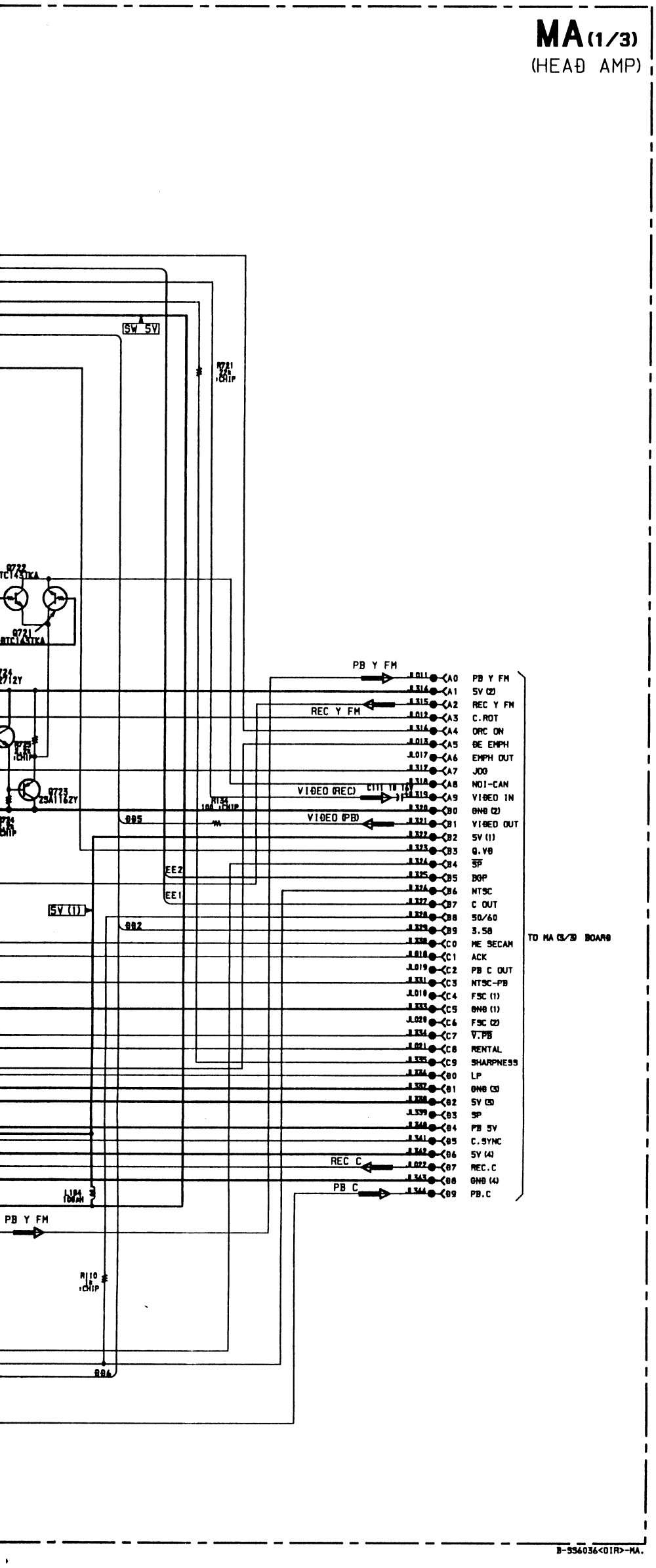
• : Pattern from the side which enables seeing.
• : Pattern of the rear side.


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
L
M
N
5W 5V
5W 12V
ME SECAM 00
SECAM 01
RF SWP 03
REC CUR. 04
5W 12V 05
REC 07
ONB 08
ENV 09
REC P H0
RP 35 H1
TO MA (2/3) BOARD
AA1
AA2
AA5
AA6
BB1
BB2
JL028
JL026
W001
Q854
2SC2712Y
REC BIAS
Q853
2SC2712Y
REC BIAS
Q851
DTC144EKA
REC 5W
Q852
DTC144EKA
REC 5W
Q855
2SC2712Y
REC BIAS
[C80]
HA11829ANT
VIDEO REC/PB AMP
REC DET
T.PLAY DET
AGC
CURRENT
LOGIC
REC C
REC Y FM
PB Y FM
PB C
Q861
2SA1162Y
BUFFER
Q862
2SC2712Y
BUFFER
Q351
DTC144EKA
SECAM 5V
Q108
DTA144EKA
NT/PAL 5V
Q906
2SC2712Y
BUFFER
Q904
2SC2712Y
EQ AMP
Q901
2SA1162Y
BUFFER
Q907
DTC144EKA
NT/PAL 5V
Q905
DTC144EKA
NT/PAL 5V
CN801
8P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
SP CH1
SP CH2
PB
REC
PB
TO DRUM
2.5 MO L
REC CUR
PB RF
RF SWP
GNB
CHECK PIN
CN802
4P
IC051
BA7025L
COMP



MA (1/3) BOARD WAVEFORMS





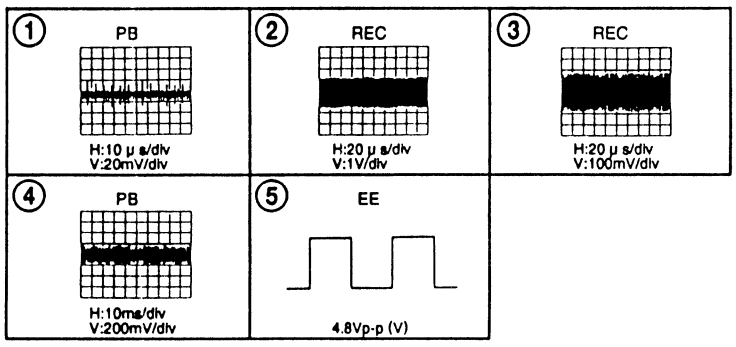
MA (1/3) BOARD

REF.	Pin No.	VOLTAGE
IC801	①	4.6 (2.3)
	②	5.3 (0)
	③	0.1 (0.8)
	④	0
	⑤	0.1 (0.8)
	⑥	0.1
	⑦	4.6 (2.3)
	⑩	5.3
	⑪	0
	⑫	0
	⑬	0
	⑭	0
	⑯	0
	⑲	2.5
	⑳	2.5
	㉑	0.3
	㉒	4.0
	㉓	1.4 (3.1)
	㉕	4.0 (3.8)
	㉖	1.6
	㉗	4.6 (1.9)
	㉘	0.5 (2.1)
	㉙	3.8 (0)
	㉚	9.5 (0)

MA (1/3) BOARD

REF.		VOLTAGE
Q105	C	2.7
	B	5.0
Q106	C	2.7
	B	0
Q108	C	0
	B	5.0
Q201	E	2.3
	B	3.1
Q851	C	0.1 (3.3)
	B	5.0 (0)
Q852	E	0 (0.8)
	C	10.9 (0.2)
	B	0.1 (3.3)
Q853	E	9.6 (0)
	B	10.3 (0.2)
Q854	E	10.3 (0.2)
	B	10.9 (0.2)
Q855	C	9.5 (0)
	B	0 (0.8)
Q861	E	5.3 (2.5)
	B	4.6 (1.9)
Q862	E	0.8 (2.4)
	B	1.4 (3.1)
Q901	E	3.4
	C	2.0
	B	2.7
Q904	E	1.5
	C	3.4
	B	2.2
Q905	C	1.7
	B	0
Q906	E	2.8
	B	3.5
Q907	C	0
	B	5.0

MA (1/3) BOARD WAVEFORMS



(1/3)
AMP)

MA (1/3) BOARD

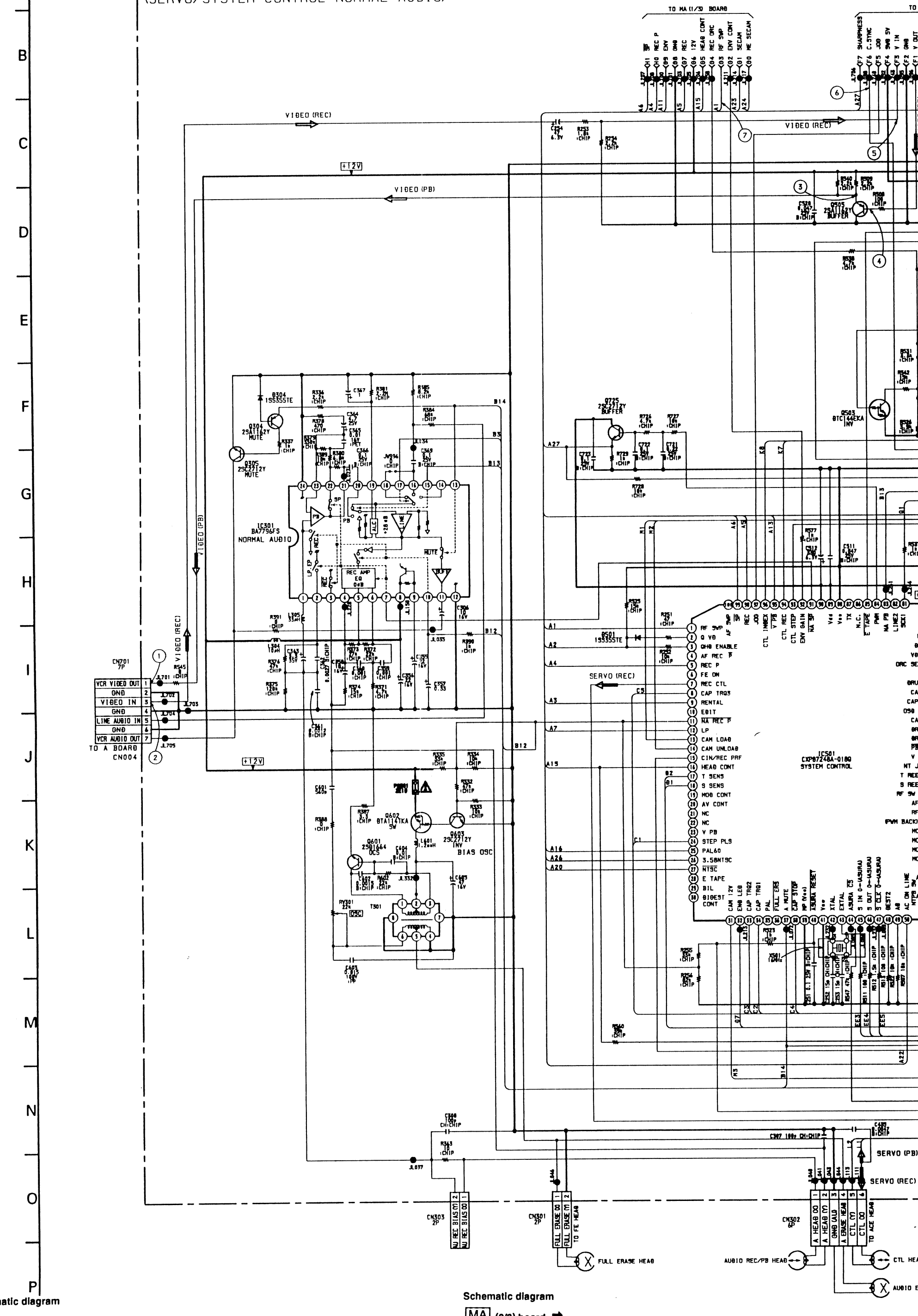
REF.	Pin No.	VOLTAGE
IC801	①	4.6 (2.3)
	②	5.3 (0)
	③	0.1 (0.8)
	④	0
	⑤	0.1 (0.8)
	⑥	0.1
	⑦	4.6 (2.3)
	⑩	5.3
	⑪	0
	⑫	0
	⑬	0
	⑭	0
	⑮	0
	⑲	2.5
	⑳	2.5
	㉑	0.3
	㉒	4.0
	㉓	1.4 (3.1)
	㉔	4.0 (3.8)
	㉕	1.6
	㉗	4.6 (1.9)
	㉘	0.5 (2.1)
	㉙	3.8 (0)
	㉚	9.5 (0)

MA (1/3) BOARD

REF.		VOLTAGE
Q105	C	2.7
	B	5.0
Q106	C	2.7
	B	0
Q108	C	0
	B	5.0
Q201	E	2.3
	B	3.1
Q851	C	0.1 (3.3)
	B	5.0 (0)
Q852	E	0 (0.8)
	C	10.9 (0.2)
	B	0.1 (3.3)
Q853	E	9.6 (0)
	B	10.3 (0.2)
Q854	E	10.3 (0.2)
	B	10.9 (0.2)
Q855	C	9.5 (0)
	B	0 (0.8)
Q861	E	5.3 (2.5)
	B	4.6 (1.9)
Q862	E	0.8 (2.4)
	B	1.4 (3.1)
Q901	E	3.4
	C	2.0
	B	2.7
Q904	E	1.5
	C	3.4
	B	2.2
Q905	C	1.7
	B	0
Q906	E	2.8
	B	3.5
Q907	C	0
	B	5.0

MA (2/3)

(SERVO/SYSTEM CONTROL NORMAL AUDIO)

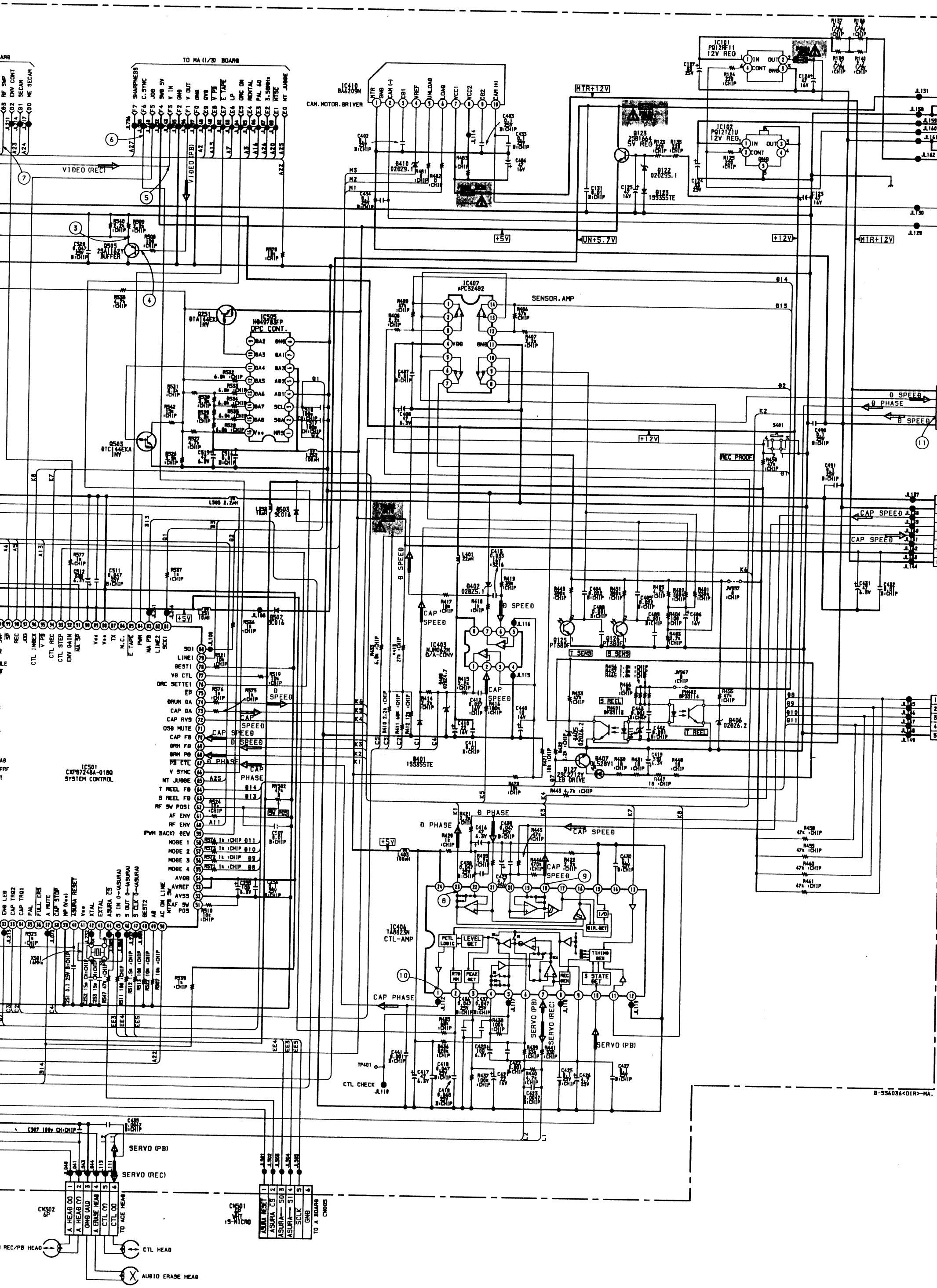


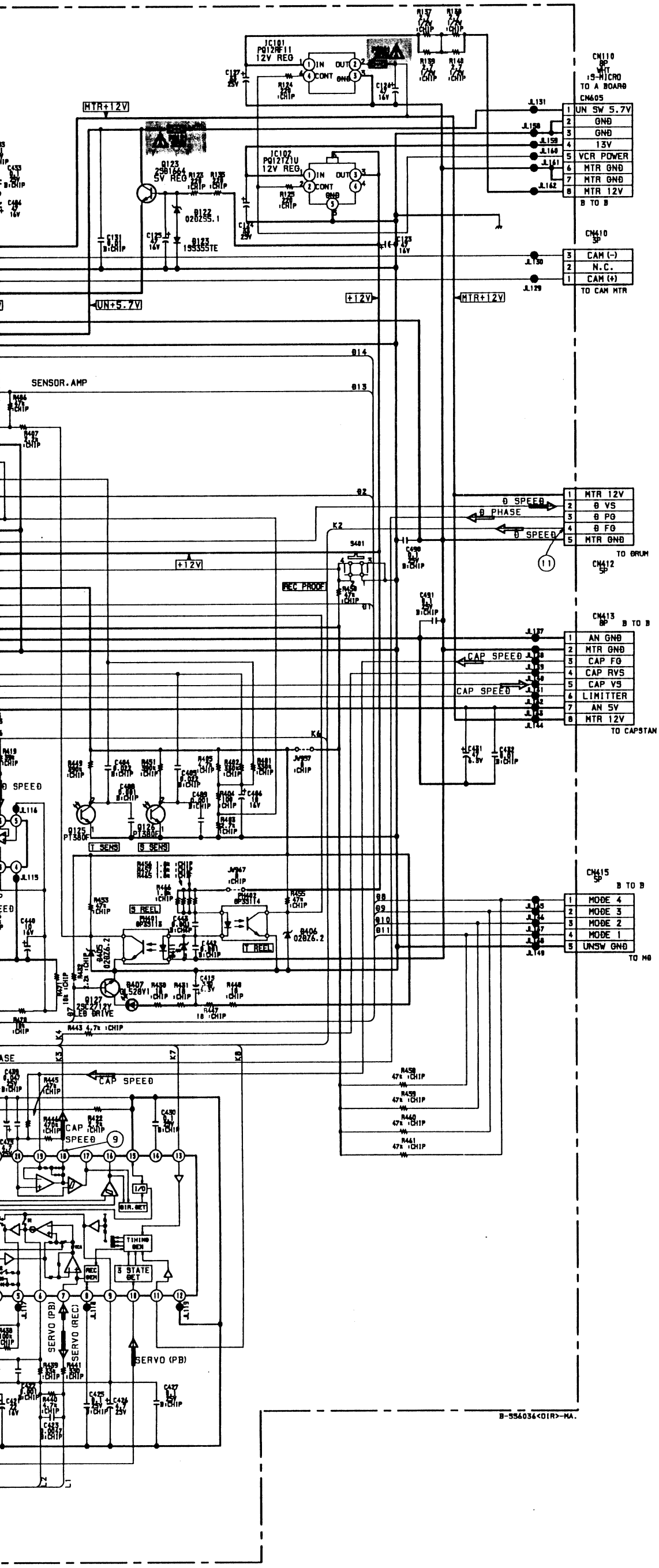
Schematic diagram

← MA (1/3) board

Schematic diagram

MA (2/3) board →


TO MAIN(3) BOARD
VIDEO (REC)
VIDEO (PB)
IC410 BA6209N
CAM. MOTOR. DRIVER
HTR+12V
+5V
UN+5.7V
+12V
IC101 PQ12RF11 12V REG
IC102 PQ12Z21U 12V REG
Q123 2SB1644 5V REG
IC407 μPC32402
SENSOR. AMP
IC505 HD49705FP DPC CONT.
Q503 BTC144EKA INV
IC501 CXP87248A-018Q SYSTEM CONTROL
IC403 NJM2670M D/A-CONV
IC406 TA8623N CTL-AMP
REC PROOF
Θ SPEED
Θ PHASE
CAP SPEED
CAP PHASE
T SENS
S SENS
S REEL
T REEL
LEVEL DET
PEAK DET
3 STATE DET
SERVO (PB)
SERVO (REC)
CTL CHECK
CN605
CN410
CN412
CN413
CN415
CN502
CN501
TO ACE HEAD
TO A BOARD
REC/PB HEAD
CTL HEAD
AUDIO ERASE HEAD
B-954036<01R>-MA.



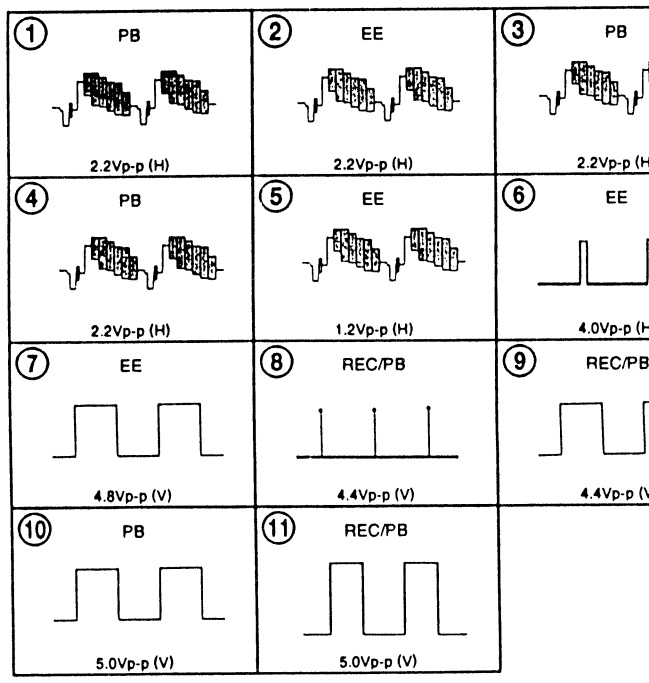
MA (2/3) BOARD

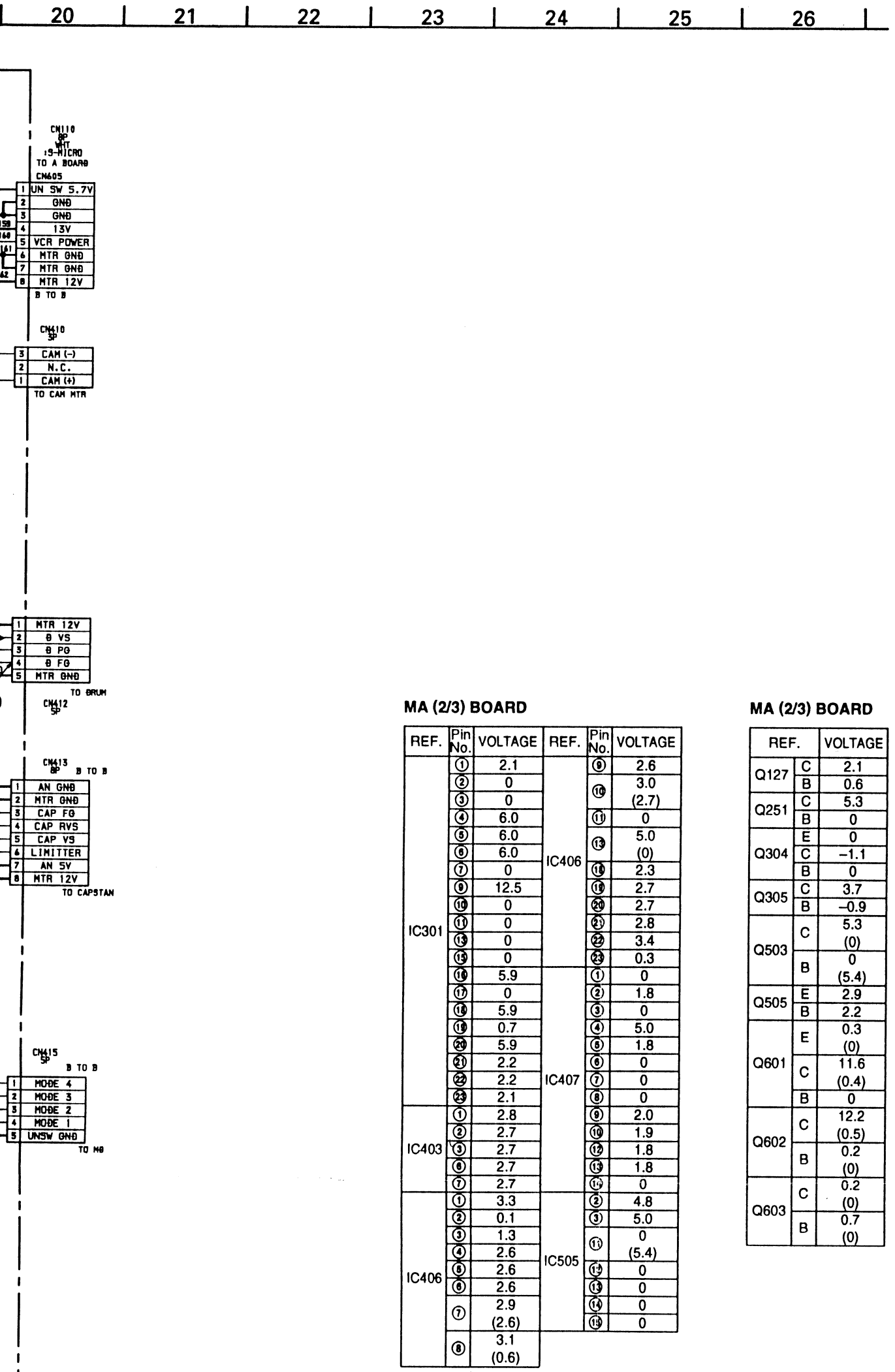
REF.	Pin No.	VOLTAGE	REF.	Pin No.	VOLTAGE
IC301	①	2.1	IC406	⑨	2.6
	②	0		⑩	3.0 (2.7)
	③	0		⑪	0
	④	6.0		⑫	5.0 (0)
	⑤	6.0		⑬	2.3
	⑥	6.0		⑭	2.7
	⑦	0		⑮	2.7
	⑧	12.5		⑯	2.8
	⑨	0		⑰	3.4
	⑩	0		⑱	0.3
	⑪	0	IC407	①	0
	⑫	0		②	1.8
	⑬	0		③	0
	⑭	5.9		④	5.0
	⑮	0		⑤	1.8
	⑯	5.9		⑥	0
	⑰	0.7		⑦	0
	⑱	5.9		⑧	0
	⑲	2.2		⑨	2.0
	⑳	2.2		⑩	1.9
	㉑	2.1		⑪	1.8
IC403	①	2.8		⑫	1.8
	②	2.7		⑬	0
	③	2.7	IC505	①	3.3
	④	2.7		②	4.8
	⑤	2.7		③	0.1
	⑥	2.7		④	5.0
	⑦	2.7		⑤	1.3
IC406	①	3.3		⑥	0 (5.4)
	②	0.1		⑦	2.6
	③	1.3		⑧	2.6
	④	2.6		⑨	2.6
	⑤	2.6		⑩	0
	⑥	2.6		⑪	0
	⑦	2.9 (2.6)		⑫	0
	⑧	3.1 (0.6)		⑬	0

MA (2/3) B

REF.		V
Q127	C	
	B	
Q251	C	
	B	
Q304	E	
	C	
	B	
Q305	C	
	B	
Q503	C	
	B	
Q505	E	
	B	
Q601	E	
	C	
	B	
Q602	C	
	B	
Q603	C	
	B	

MA (2/3) BOARD WAVEFORMS





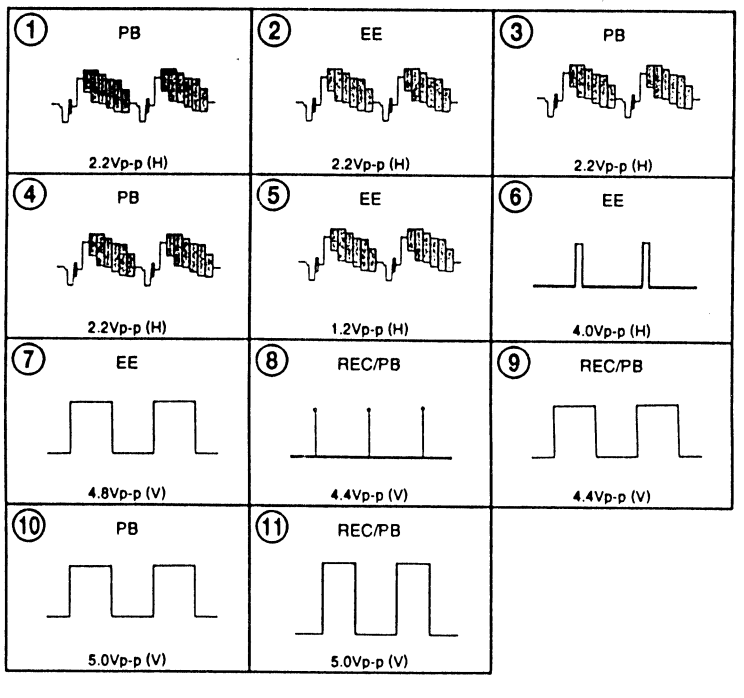
MA (2/3) BOARD

REF.	Pin No.	VOLTAGE	REF.	Pin No.	VOLTAGE
IC301	①	2.1	IC406	⑨	2.6
	②	0		⑩	3.0 (2.7)
	③	0		⑪	0
	④	6.0		⑬	5.0 (0)
	⑤	6.0		⑯	2.3
	⑥	6.0		⑱	2.7
	⑦	0		⑳	2.7
	⑨	12.5		㉑	2.8
	⑩	0		㉒	3.4
	⑪	0		㉓	0.3
	⑬	0	IC407	①	0
	⑮	0		②	1.8
	⑯	5.9		③	0
	⑰	0		④	5.0
	⑱	5.9		⑤	1.8
	⑲	0.7		⑥	0
	⑳	5.9		⑦	0
	㉑	2.2		⑧	0
	㉒	2.2		⑨	2.0
	㉓	2.1		⑩	1.9
IC403	①	2.8		⑫	1.8
	②	2.7		⑬	1.8
	③	2.7		⑭	0
	⑥	2.7	IC505	②	4.8
	⑦	2.7		③	5.0
IC406	①	3.3		⑪	0 (5.4)
	②	0.1		⑫	0
	③	1.3		⑬	0
	④	2.6		⑭	0
	⑤	2.6		⑮	0
	⑥	2.6			
	⑦	2.9 (2.6)			
	⑧	3.1 (0.6)			

MA (2/3) BOARD

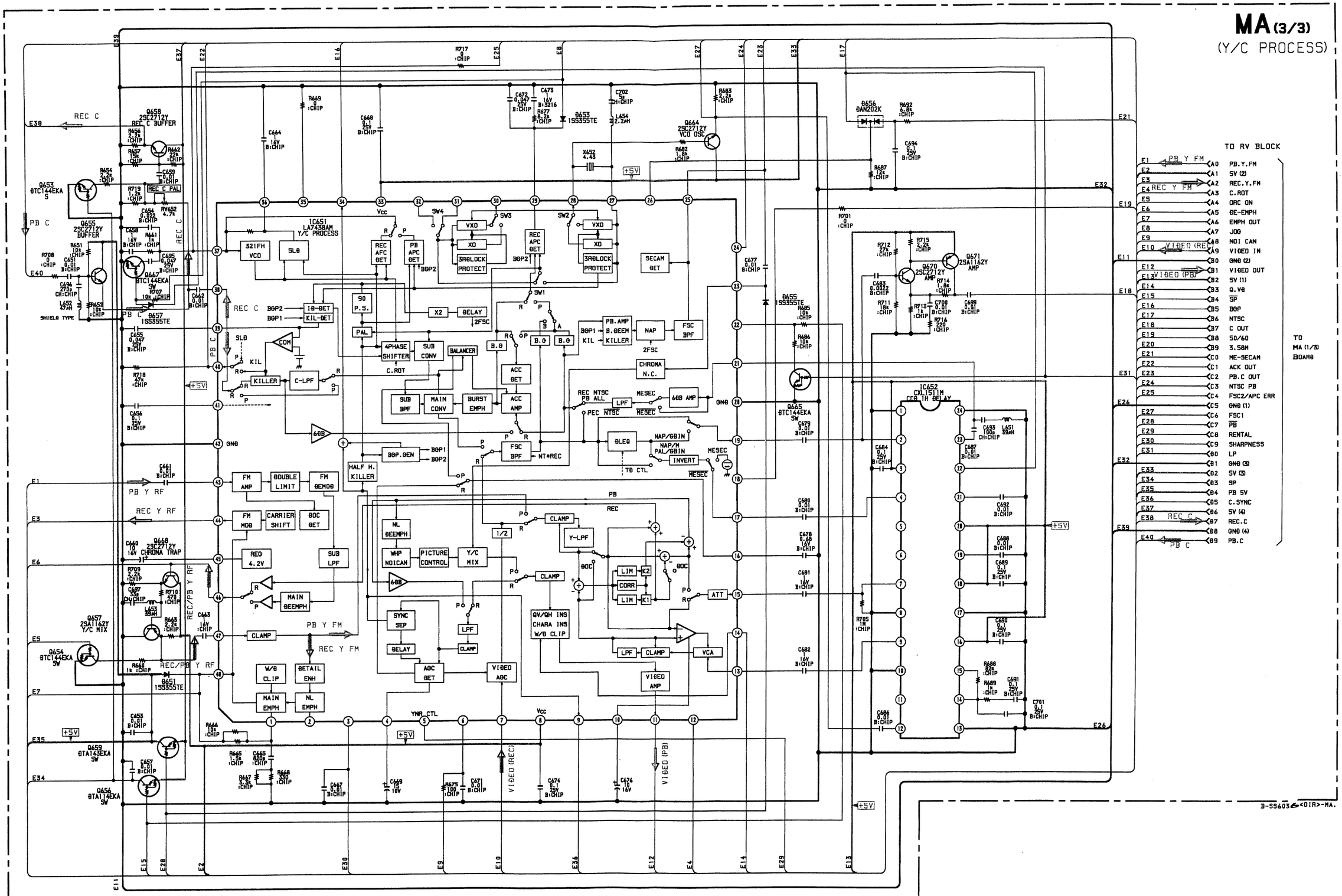
REF.		VOLTAGE
Q127	C	2.1
	B	0.6
Q251	C	5.3
	B	0
Q304	E	0
	C	–1.1
	B	0
Q305	C	3.7
	B	–0.9
Q503	C	5.3 (0)
	B	0 (5.4)
Q505	E	2.9
	B	2.2
Q601	E	0.3 (0)
	C	11.6 (0.4)
	B	0
Q602	C	12.2 (0.5)
	B	0.2 (0)
Q603	C	0.2 (0)
	B	0.7 (0)

MA (2/3) BOARD WAVEFORMS



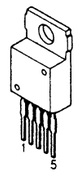
MA (3/3)

(Y/C PROCESS)

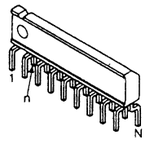


4-4. SEMICONDUCTORS

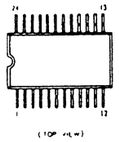
BA6209N



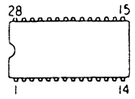
BA7025L
STR-S6707



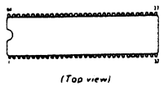
BA7796FS-E2
CXL1511M-T6



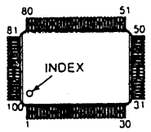
CXA1114P



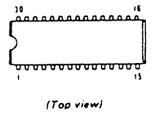
CXP85460



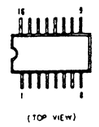
CXP87248A-027Q



HA118291ANT



HD49783FP



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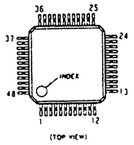

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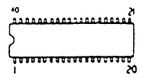

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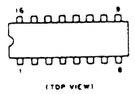

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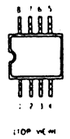
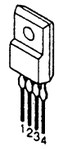
S-3510ACFJ



PQ12RE11



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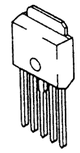

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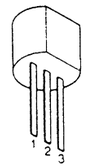

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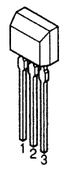
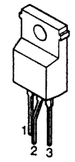
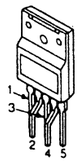


SE135N



SI-3050CA
SI-3090CA



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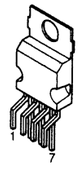

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ST24C16FB6
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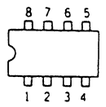
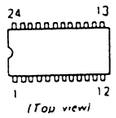


TA8823N



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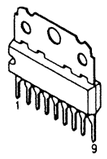

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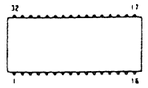

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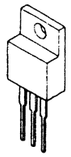
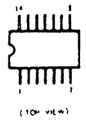


µPC324G2



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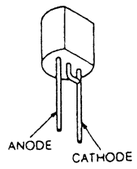
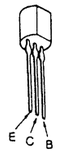
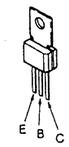


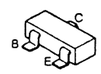
BF421



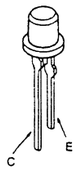
BF871



DTA114TKA
DTA143EK
DTA143EKA
DTA144EKA
DTC114EK
DTC144EKA
2SA1037AK
2SA1162G
2SA1162Y
2SC1623-L5L6
2SC2412K
2SC2712Y

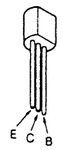


PT380F

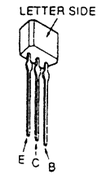


S2000N-16E305A

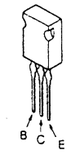
2SA1091-O
2SC1740S



DTA144TSA-TP
2SA933AS
2SC2785-HFE



2SB1496EF



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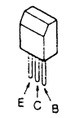
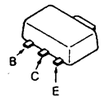
2SD774



2SD1664-QR



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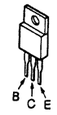
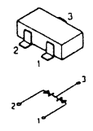
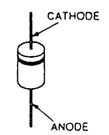


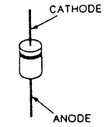
DAN202K



EG-1Z-V1
EL1Z
ERD28-08S
HZT33-02
RGP02-17PKG23
RGP02-17EL-6433
RGP10GPKG23



BYD33G
ERC06-15S
ERC81-004
RGP10JPKG23
RGP15J-6040
RS3FS-LFU1
1SS133T-77



GBU4JL-6088

MTZJ-T-73-9.1C
MTZJ-T-77-5.1B
MTZJ-T-77-6.2
MTZJ-T-77-6.2B
MTZJ-T-77-6.8A
MTZJ-T-77-8.2C
MTZJ-T-77-9.1C
MTZJ-6.2B
RD5.1ESB2
RD6.2ESB2
RD6.8ESB2
RD8.2ESB3
RD9.1ESB2
RD9.1ESB3
1SS292T-77
11ES2

RGP10GL-6527

SC016-2-TE12RA
1SS355
1SS355TE

02DZ4.7
02DZ5.1
02DZ6.2
02DZ9.1

GL528V1
SLR-305DCA47

Schematic diagram

← MA (3/3) board

SECTION 5
EXPLODED VIEWS

The componants identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

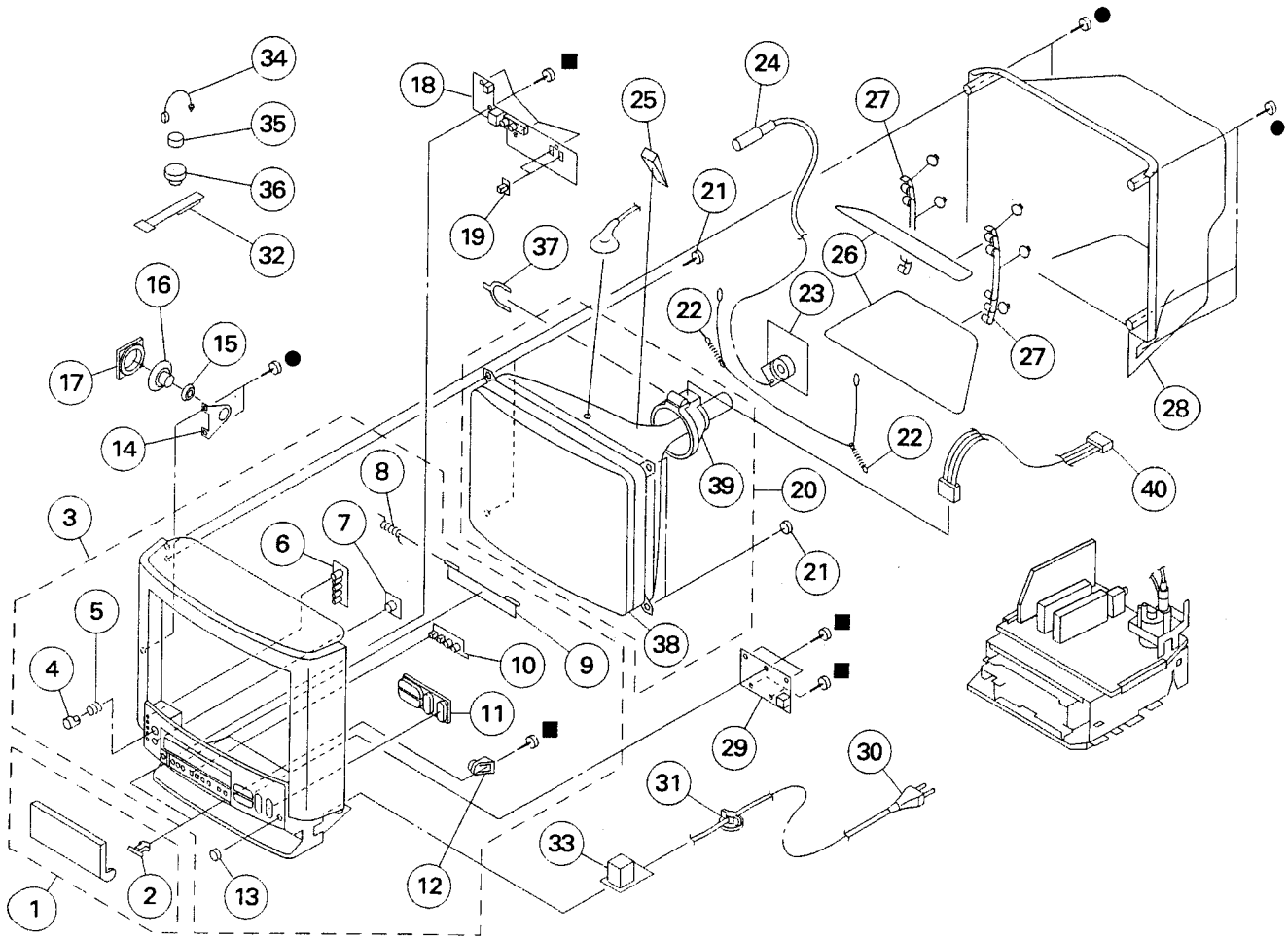
Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

5-1. PICTURE TUBE

● 7-685-663-71 +BVTP 4X16
■ 7-685-648-79 +BVTP 3X12



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4033-068-1	DOOR ASSY	
2	3-703-035-11	SHAFT, LID	2
3	X-4033-092-1	BEZNET ASSY	
4	4-050-428-01	BUTTON, POWER	4-13
5	2-621-017-00	SPRING, COMPRESSION	
6	4-050-430-01	GUIDE, LIGHT	
7	4-050-431-01	BUTTON, EJECT	
8	4-050-155-01	SPRING, FL	
9	4-042-012-22	DOOR, CASSETTE	
10	4-042-006-11	BUTTON, CONTROL	
11	4-050-429-01	BUTTON, MULTI	
12	4-919-393-51	DAMPER	
13	4-050-432-01	FILTER, REMOTE	
14	*4-050-632-01	BRACKET, SP	
15	*4-050-631-01	CUSHION (B)	
16	1-504-485-11	SPEAKER (8CM)	
17	*4-050-630-01	CUSHION (A)	
18	*A-1372-156-A	H3 BOARD, COMPLETE	
19	4-042-018-21	BUTTON, SLIDE	
20	⚠8-738-784-41	ITC ASSY	21,25,37-40

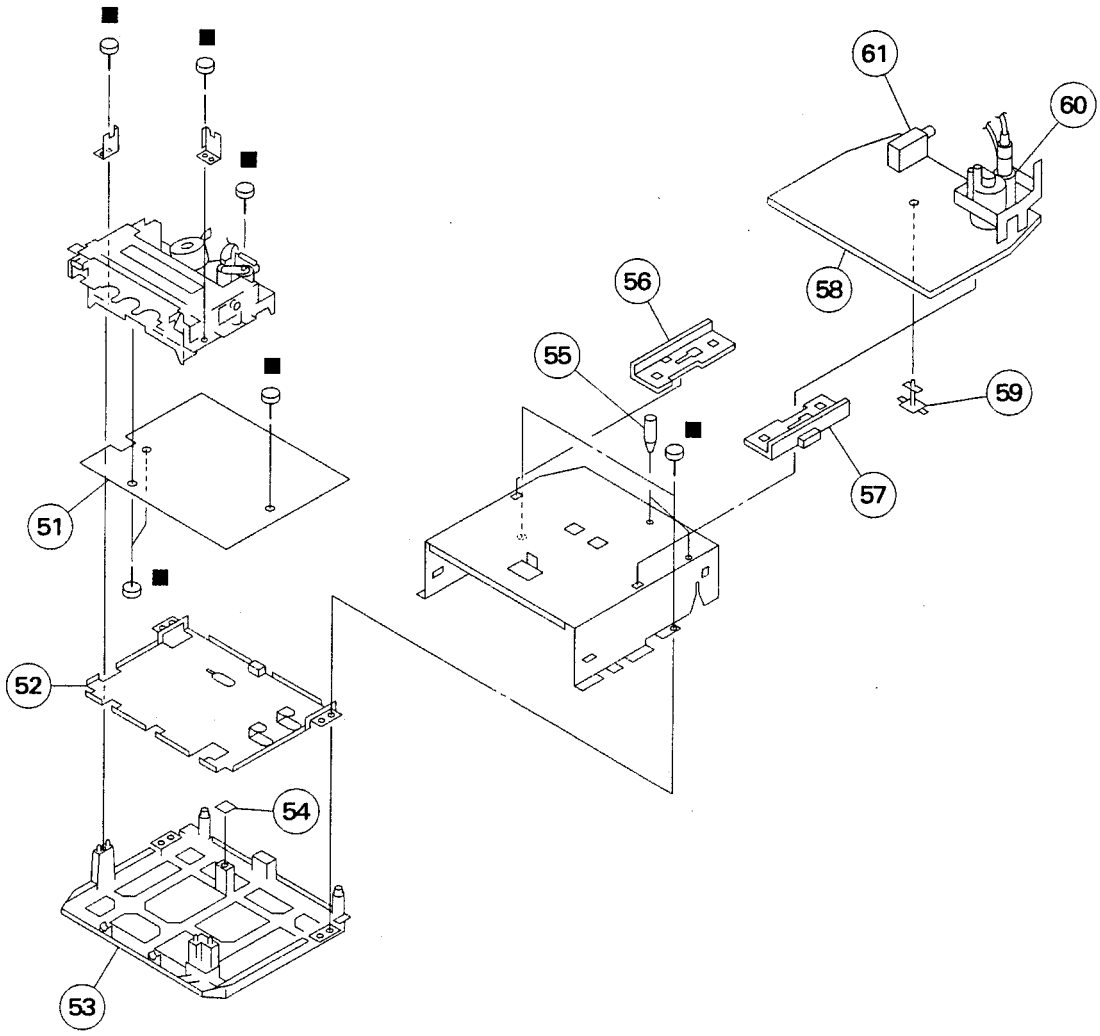
REF. NO.	PART NO.	DESCRIPTION	REMARK
21	4-036-190-01	SCREW (5), SELF TAPPING	
22	4-369-318-21	SPRING, TENSION	
23	*A-1331-475-A	C BOARD, COMPLETE	
24	1-900-900-22	LEAD ASSY, FOCUS	
25	3-704-495-01	SPACER, DY	
26	⚠1-406-828-11	COIL, DEGAUSSING	
27	*4-341-778-01	BAND, DEGAUSSING COIL	
28	4-050-435-01	COVER, REAR	
29	*A-1372-157-A	H4 BOARD, COMPLETE	
30	⚠1-765-286-11	CORD, POWER	
31	*4-202-531-01	AC CORD LOCK (SC)	
32	4-051-736-21	PIECE A(90), CONV. CORRECT	
33	*A-1241-200-A	F BOARD, COMPLETE	
34	4-308-870-00	CLIP, LEAD WIRE	
35	1-452-032-00	MAGNET,DISC ; 10mm ϕ	
36	1-452-094-00	MAGNET, ROTATABLE DISK ; 15mm ϕ	
37	1-452-277-00	MAGNET, BMC	
38	⚠8-738-784-05	PICTURE TUBE A51JXH61X	
39	⚠8-451-295-45	DEFLECTION YOKE Y21PFA2BA	
40	1-775-044-11	CONNECTOR, DY (DOUBLE)	

The componants identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

5-2. CHASSIS

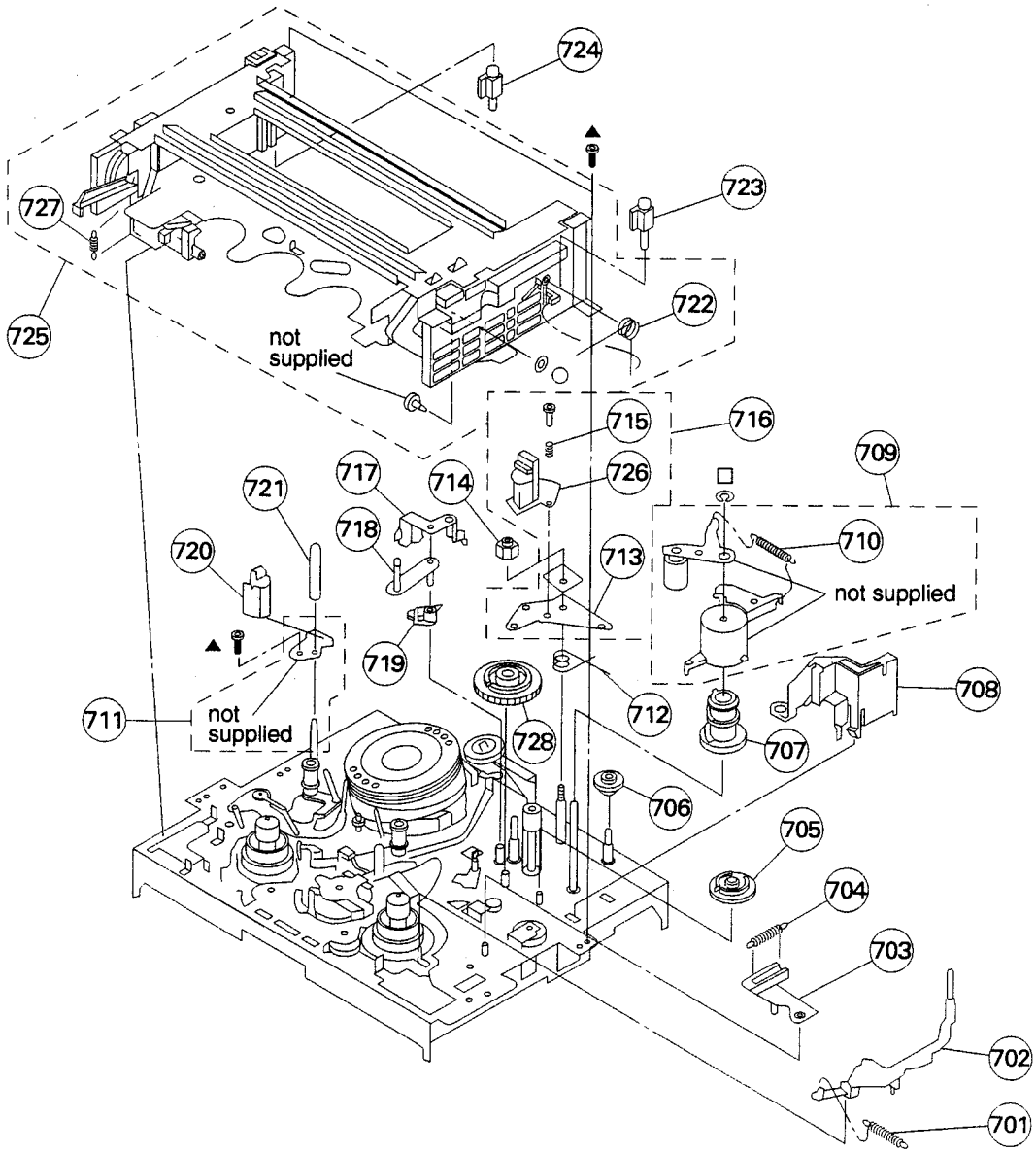
■ 7-685-648-79 +BVTP 3X12



REF. NO.	PART NO.	DESCRIPTION	REMARK
51	* A-1306-539-A	MA BOARD, COMPLETE	
52	* 3-960-067-11	HOLDER, MA	
53	* 4-050-164-03	BRACKET, VTR	
54	3-965-923-01	SPACER, RUBBER	
55	* 3-691-950-01	SPACER, P.C.B	
56	* 4-050-160-01	RAIL, GUIDE (L)	
57	* 4-050-161-01	RAIL, GUIDE (R)	
58	* A-1297-657-A	A BOARD, COMPLETE	
59	* 4-376-053-01	ANCHOR, PC BOARD	
60	⚠ 1-453-199-11	TRANSFORMER ASSY, FLYBACK	NX-1741/U2E
61	⚠ 8-598-331-00	TUNER BT-AC401	

5-3. MECHANISM DECK ASSEMBLY (1)

▲ : SCREW (3X8) 7-685-646-79
○ : STOP RING 2. 4, TYPE-CS 7-624-190-61
□ : STOP RING 3. 0, TYPE-E 7-646-106-04

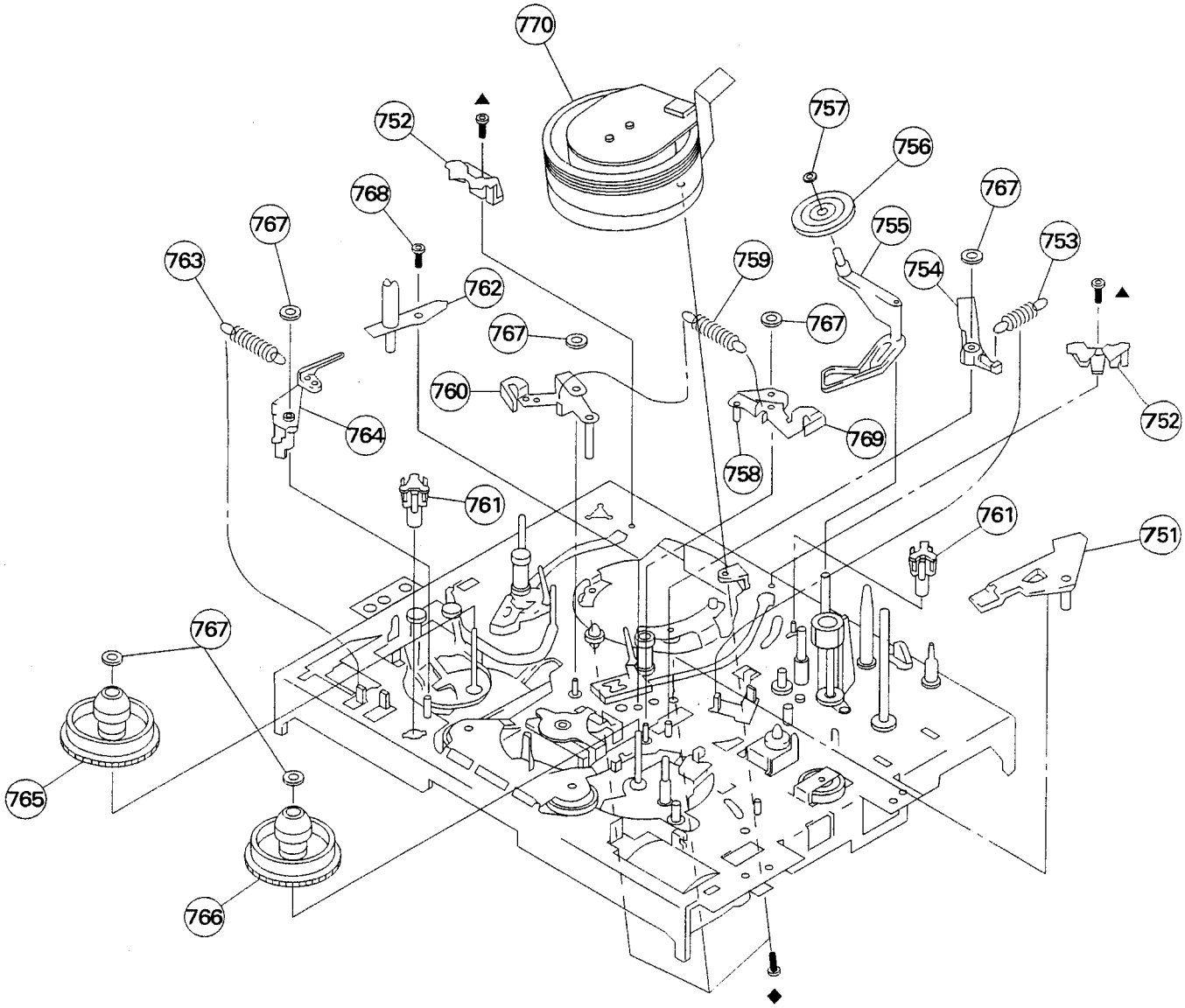


REF. NO.	PART NO.	DESCRIPTION	REMARK
701	3-958-505-01	SPRING (SOFT BRAKE T), TENSION	
702	X-3943-882-1	BRAKE (T) ASSY, SOFT	
703	X-3943-885-1	ARM ASSY, RVS BRAKE	
704	3-958-462-01	SPRING (RVS BRAKE), TENSION	
705	3-958-153-01	GEAR, PRESS	
706	3-958-501-01	SCREW, ACE ADJUSTMENT	
707	3-958-151-01	GEAR, ELEVATOR	
708	3-958-454-01	OPNER, LID	
709	A-6746-072-A	PRESS BLOCK ASSY, PINCH	710
710	3-958-455-01	SPRING (PINCH), TENSION	
711	X-3945-248-1	FEH ASSY	
712	3-958-487-01	SPRING, (AEC) TORSION COIL	
713	3-958-491-01	BASE, ACE	
714	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
715	3-960-439-02	SPRING (ACE), COMPRESSION	

REF. NO.	PART NO.	DESCRIPTION	REMARK
716	A-6736-103-H	ACE BLOCK ASSY	
717	3-962-298-01	BRACKET, TG7 TAPE	
718	X-3944-797-1	TG8 ASSY	
719	3-958-421-01	HOLDER, TG8	
720	1-500-144-11	HEAD, FE	
721	X-3944-460-1	ROLLER ASSY, TG2	
722	3-958-195-01	SPRING, TORSION	
723	3-960-216-01	PLATE, LIGHT GUIDE, TOP SENSOR	
724	3-960-215-01	PLATE, LIGHT GUIDE, END SENSOR	
725	A-6715-496-A	FL BLOCK ASSY	722, 727
726	1-506-485-11	PIN, CONNECTOR 6P	
727	3-958-467-01	SPRING, TENSION COIL	
728	3-958-152-01	GEAR, TG8	

5-4. MECHANISM DECK ASSEMBLY (2)

▲ : SCREW (3X8) 7-685-646-79
◆ : +P 3X6 7-682-547-04

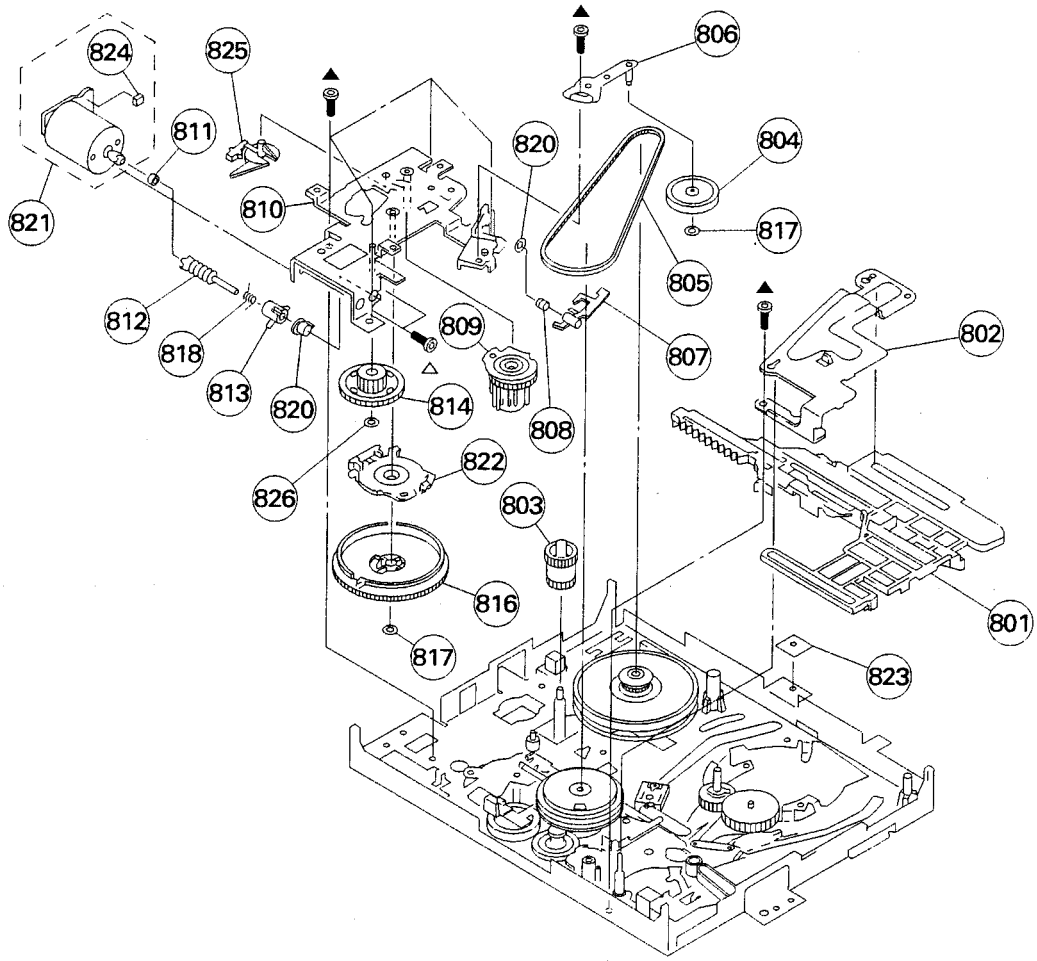


REF. NO.	PART NO.	DESCRIPTION	REMARK
751	3-960-138-01	ARM, PENDULUM COMPULSION	
752	3-958-389-01	CATCHER	
753	3-958-535-01	SPRING, TENSION	
754	3-960-139-01	ARM, NEUTRALITY	
755	X-3943-896-1	ARM ASSY, HC	
756	X-3944-393-1	ROLLER ASSY, HC	
757	3-321-393-01	WASHER, STOPPER	
758	X-3945-654-1	LEVER (T) ASSY, MAIN BRAKE	
759	3-958-517-01	SPRING, TENSIONCOIL	
760	X-3945-650-1	BRAKE (S), ASSY, MAIN	

REF. NO.	PART NO.	DESCRIPTION	REMARK
761	3-958-390-01	SHAFT, PC BOARD	
762	3-958-391-01	PLATE, LIGHT GUIDE, LED	
763	3-958-443-01	SPRING, STRETCH COIL SPRING	
764	3-958-450-01	BRAKE (S), SOFT	
765	X-3943-902-1	TABLE, REEL (S) ASSY	
766	X-3943-903-1	TABLE, REEL (T) ASSY	
767	3-669-595-00	WASHER (2), STOPPER	
768	3-961-441-01	SCREW (3X8)	
769	X-3945-651-1	ARM (T) ASSY, MAIN BRAKE	
770	1-759-034-11	DRUM ASSY (DZH-72A-R)	

5-5. MECHANISM DECK ASSEMBLY (3)

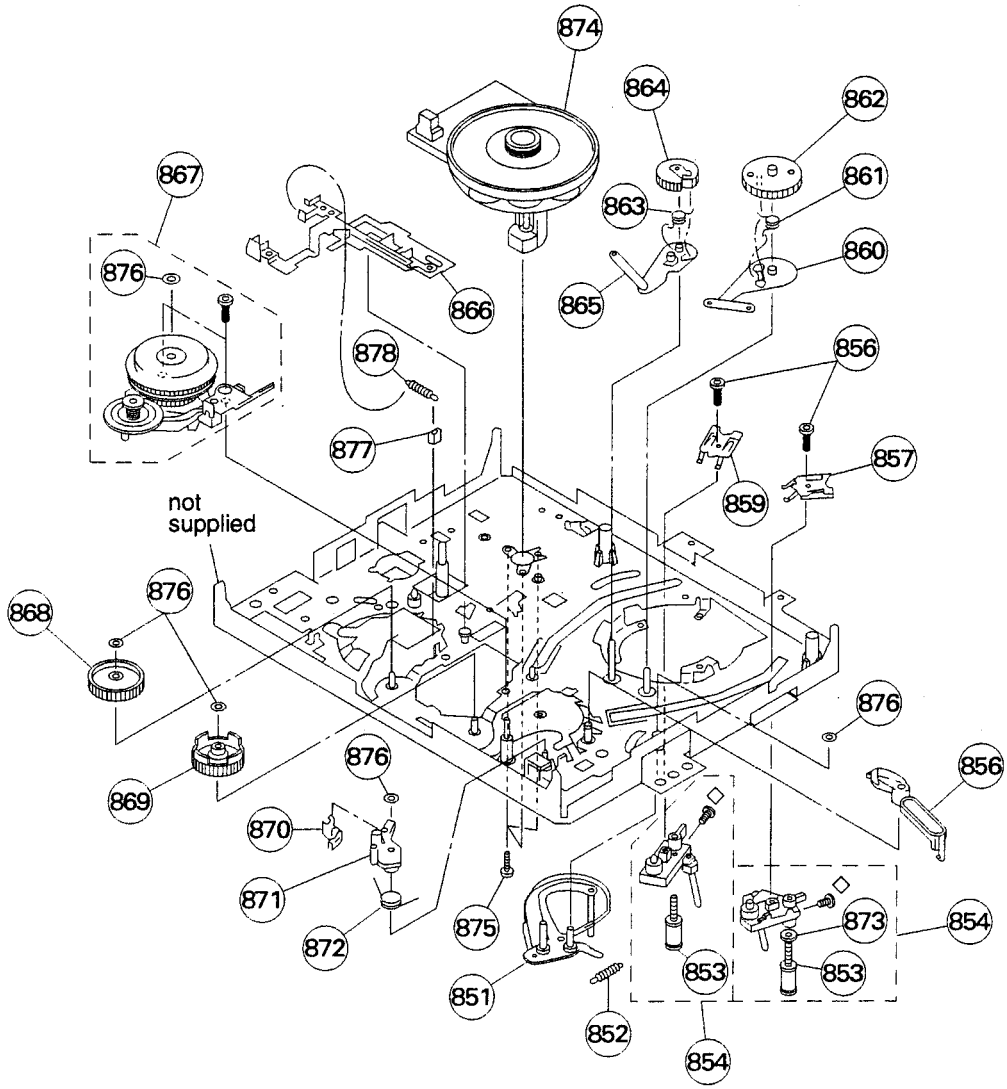
▲ : SCREW (3X8) 7-685-646-79
△ : SCREW +PS 3X4 7-682-645-01



REF. NO.	PART NO.	DESCRIPTION	REMARK
801	3-958-163-01	SLIDER, MAIN	
802	*3-958-763-01	RETAINER	
803	3-958-162-01	GEAR, UPPER/LOWER COMMUNICATION	
804	3-958-448-01	WHEEL, TENSION	
805	3-958-361-01	BELT, TIMING	
806	X-3943-889-1	ARM ASSY, TENSION VEHICLE	
807	X-3943-888-1	BRAKE ASSY, CAP	
808	3-958-445-01	SPRING, TORSIONCOIL (CAP BRAKE)	
809	3-958-156-01	GEAR, FL DRIVING	
810	*X-3943-884-1	CHASSIS ASSY, CAM MOTOR	
811	3-959-840-01	RUBBER, JOINT	
812	3-958-159-01	WORM	
813	3-958-160-01	PROPELLOR	
814	3-958-157-01	WHEEL, WORM	
816	3-958-161-01	GEAR, CAM	
817	3-669-595-00	WASHER (2), STOPPER	
818	3-958-460-01	SPRING, ONE-WAY	
819	3-958-155-01	BEARING, CAM MOTOR	
820	3-701-439-21	WASHER	
821	X-3943-883-1	MOTOR ASSY, CAM	824
822	1-762-076-11	SWITCH, ROTARY	
823	3-965-923-01	SPACER, RUBBER	
824	1-766-723-11	CONNECTOR, BOARD TO BOARD	3P
825	3-965-977-01	RETAINER, CAM GEAR	
826	3-966-092-01	RING, RETAINING, SLLIT WASHER	

5-6. MECHANISM DECK ASSEMBLY (4)

◇ :+B 2X3 7-621-772-08



REF. NO.	PART NO.	DESCRIPTION	REMARK
851	X-3943-886-1	TG1 ASSY	
852	3-958-492-01	SPRING (TG1), TENSION COIL	
853	X-3944-378-1	ROLLER ASSY, GUIDE	
854	A-6750-316-A	SHUTTLE (S) BLOCK ASSY	
855	A-6750-314-A	T BLOCK ASSY, SHUTTLE	
856	3-958-504-01	ARM, FIXED RELEASE	
857	3-960-687-01	SPRING, LEAF (S), LOADING	
858	3-960-720-01	SCREW	
859	3-960-688-01	SPRING, LEAF (T), LOADING	
860	X-3943-890-1	LEVER (S) ASSY, LOADING	
861	3-960-448-01	SPRING (S), TORSION COIL	
862	3-958-476-01	GEAR (S), LOADING	
863	3-960-449-01	SPRING (T), TORSION COIL	
864	3-958-485-02	GEAR (T), LOADING	
865	X-3943-891-1	LEVER (T) ASSY, LOADING	

REF. NO.	PART NO.	DESCRIPTION	REMARK
866	X-3943-897-1	LEVER ASSY, TRIGGER	
867	A-6739-102-A	RKB BLOCK ASSY	876
868	3-962-960-01	GEAR (T-K), IDLER	
869	3-962-959-01	GEAR (S-K), IDLER	
870	3-958-533-01	CLAW, S WINDING	
871	3-958-532-01	ARM, S WINDING	
872	3-958-534-01	SPRING, TORSION	
873	3-962-874-01	O-RING	
874	1-698-409-11	MOTOR, DC (CAPSTAN)	
875	3-960-272-01	SCREW (2. 6)	
876	3-669-595-00	WASHER (2), STOPPER	
877	3-959-840-01	RUBBER, JOINT	
878	3-958-529-01	SPRING (MOMENT), TENSION	

SECTION 6
ELECTRICAL PARTS LIST

F A

NOTE:

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The componants identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

- CAPACITORS
  PF : μμ F
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

TV BLOCK

REF. NO.	PART NO.	DESCRIPTION			REMARK
	*A-1241-200-A	F BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C901	⚠1-107-564-11	FILM	0.22MF	20% 300V	
		<CONNECTOR>			
CN901	*1-580-843-11	PIN, CONNECTOR (POWER)			
CN902	*1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P			
		<FUSE>			
F901	⚠1-576-231-21	FUSE (H.B.C.) 4A/250V			
	*1-533-725-11	HOLDER, FUSE ; F901			
		<COIL>			
L901	⚠1-411-542-11	COIL, CHOKE 60MH			
		**********			
	*A-1297-657-A	A BOARD, COMPLETE			
		**********			
	4-202-373-01	SPRING, IC			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
	*4-386-664-01	SPRING, IC			
		<CAPACITOR>			
C001	1-163-017-00	CERAMIC CHIP	0.0047MF	10% 50V	
C003	1-163-109-00	CERAMIC CHIP	47PF	5% 50V	
C004	1-163-109-00	CERAMIC CHIP	47PF	5% 50V	
C005	1-126-967-11	ELECT	47MF	20% 10V	
C006	1-126-965-11	ELECT	22MF	20% 50V	
C007	1-124-925-11	ELECT	2.2MF	20% 50V	
C013	1-163-084-00	CERAMIC CHIP	1.5PF	0.25PF 50V	
C018	1-126-935-11	ELECT	470MF	20% 16V	
C019	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C020	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C029	1-125-710-11	CAPACITOR	0.1F	0 0	
C030	1-126-935-11	ELECT	470MF	20% 16V	
C031	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C034	1-126-933-11	ELECT	100MF	20% 16V	
C101	1-107-682-11	CERAMIC CHIP	1MF	10% 16V	
C102	1-107-682-11	CERAMIC CHIP	1MF	10% 16V	
C103	1-107-682-11	CERAMIC CHIP	1MF	10% 16V	
C104	1-163-017-00	CERAMIC CHIP	0.0047MF	10% 50V	
C118	1-164-489-11	CERAMIC CHIP	0.22MF	10% 16V	
C119	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C120	1-126-934-11	ELECT	220MF	20% 16V	

REF. NO.	PART NO.	DESCRIPTION			REMARK
C121	1-126-964-11	ELECT	10MF	20% 50V	
C122	1-164-665-11	CERAMIC CHIP	0.039MF	10% 50V	
C123	1-163-105-00	CERAMIC CHIP	33PF	5% 50V	
C124	1-164-665-11	CERAMIC CHIP	0.039MF	10% 50V	
C126	1-126-967-11	ELECT	47MF	20% 16V	
C127	1-126-965-11	ELECT	22MF	20% 50V	
C128	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C129	1-126-967-11	ELECT	47MF	20% 16V	
C130	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C147	1-164-665-11	CERAMIC CHIP	0.039MF	10% 50V	
C149	1-216-295-91	CONDUCTOR, CHIP			
C151	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C152	1-126-967-11	ELECT	47MF	20% 16V	
C154	1-124-925-11	ELECT	2.2MF	20% 50V	
C155	1-124-925-11	ELECT	2.2MF	20% 50V	
C157	1-163-235-11	CERAMIC CHIP	22PF	5% 50V	
C158	1-163-235-11	CERAMIC CHIP	22PF	5% 50V	
C159	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C161	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C165	1-163-090-00	CERAMIC CHIP	7PF	0.25PF 50V	
C166	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C167	1-104-329-11	CERAMIC CHIP	0.1MF	10% 50V	
C168	1-126-965-11	ELECT	22MF	20% 50V	
C169	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C170	1-163-035-00	CERAMIC CHIP	0.047MF	50V	
C171	1-163-127-00	CERAMIC CHIP	270PF	5% 50V	
C173	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C210	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C212	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C213	1-124-903-11	ELECT	1MF	20% 50V	
C214	1-164-161-11	CERAMIC CHIP	0.0022MF	10% 50V	
C215	1-163-809-11	CERAMIC CHIP	0.047MF	10% 25V	
C216	1-126-942-61	ELECT	1000MF	20% 25V	
C217	1-126-942-61	ELECT	1000MF	20% 25V	
C250	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C300	1-126-941-11	ELECT	470MF	20% 25V	
C301	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C302	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C304	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C305	1-124-925-11	ELECT	2.2MF	20% 50V	
C306	1-136-164-00	FILM	0.082MF	5% 50V	
C307	1-163-809-11	CERAMIC CHIP	0.047MF	10% 25V	
C308	1-164-232-11	CERAMIC CHIP	0.01MF	10% 50V	
C309	1-126-963-11	ELECT	4.7MF	20% 50V	
C310	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C312	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C313	1-163-145-00	CERAMIC CHIP	0.0015MF	5% 50V	
C314	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C315	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C316	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C317	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C318	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C319	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C320	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	

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REF. NO.	PART NO.	DESCRIPTION			REMARK
C321	1-126-963-11	ELECT	4.7MF	20%	50V
C323	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C324	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C325	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C326	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C328	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C329	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C330	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C331	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C332	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C333	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C334	1-126-965-11	ELECT	22MF	20%	50V
C335	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C336	1-162-638-11	CERAMIC CHIP	1MF		16V
C337	1-162-638-11	CERAMIC CHIP	1MF		16V
C338	1-126-965-11	ELECT	22MF	20%	50V
C339	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C340	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C341	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C342	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C344	1-126-967-11	ELECT	47MF	20%	16V
C345	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C347	1-126-934-11	ELECT	220MF	20%	16V
C356	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C357	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C358	1-126-965-11	ELECT	22MF	20%	50V
C401	1-124-234-00	ELECT	22MF	20%	16V
C402	1-126-967-11	ELECT	47MF	20%	16V
C403	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C404	1-126-933-11	ELECT	100MF	20%	16V
C405	1-164-346-11	CERAMIC CHIP	1MF		16V
C406	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C407	1-126-967-11	ELECT	47MF	20%	16V
C408	1-126-967-11	ELECT	47MF	20%	16V
C409	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C410	1-104-661-91	ELECT	330MF	20%	16V
C411	1-126-967-11	ELECT	47MF	20%	16V
C412	1-164-346-11	CERAMIC CHIP	1MF		16V
C415	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C416	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C417	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C418	1-126-933-11	ELECT	100MF	20%	16V
C501	1-131-351-00	TANTALUM	4.7MF	10%	35V
C502	1-104-329-11	CERAMIC CHIP	0.1MF	10%	50V
C503	1-126-949-11	ELECT	220MF	20%	35V
C504	1-126-968-11	ELECT	100MF	20%	50V
C505	1-107-913-11	ELECT	470MF	20%	50V
C506	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C507	1-124-903-11	ELECT	1MF	20%	50V
C508	1-130-785-11	MYLAR	0.47MF	10%	100V
C509	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C510	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C601 ⚠	1-107-564-11	FILM	0.22MF	20%	300V
C602 ⚠	1-107-564-11	FILM	0.22MF	20%	300V
C603	1-113-893-51	ELECT	0.0047MF	20%	250V
C604	1-113-893-51	ELECT	0.0047MF	20%	250V
C605	1-113-893-51	ELECT	0.0047MF	20%	250V
C606	1-113-893-51	ELECT	0.0047MF	20%	250V
C607 ⚠	1-113-890-61	ELECT	0.0022MF	20%	250V
C608 ⚠	1-113-890-61	ELECT	0.0022MF	20%	250V
C610	1-126-969-11	ELECT	220MF	20%	50V
C611	1-136-619-11	FILM	0.0016MF	3%	2KV
C612	1-164-735-11	CAPACITOR	0.0015MF	10%	500V
C613	1-126-942-61	ELECT	1000MF	20%	25V
C614	1-164-735-11	CAPACITOR	0.0015MF	10%	500V
C615	1-104-664-11	ELECT	47MF	20%	25V
C616	1-104-664-11	ELECT	47MF	20%	25V
C617	1-104-664-11	ELECT	47MF	20%	25V
C618	1-104-664-11	ELECT	47MF	20%	25V
C619	1-104-664-11	ELECT	47MF	20%	25V
C620	1-102-074-00	CERAMIC	0.001MF	10%	50V
C621	1-126-105-11	ELECT	1000MF	20%	25V
C622	1-164-735-11	CAPACITOR	0.0015MF	10%	500V
C623	1-164-735-11	CAPACITOR	0.0015MF	10%	500V
C624	1-125-318-00	ELECT(BLOCK)	220MF	20%	400V
C625	1-126-936-11	ELECT	3300MF	20%	16V
C626	1-107-652-11	ELECT	10MF	20%	250V
C627	1-164-735-11	CAPACITOR	0.0015MF	10%	500V
C628	1-126-964-11	ELECT	10MF	20%	50V
C629	1-124-347-00	ELECT	100MF	20%	160V
C630	1-126-950-11	ELECT	330MF	20%	35V
C631	1-126-943-11	ELECT	2200MF	20%	25V
C632	1-126-967-11	ELECT	47MF	20%	16V
C637	1-126-933-11	ELECT	100MF	20%	10V
C638	1-126-967-11	ELECT	47MF	20%	16V
C639	1-104-664-11	ELECT	47MF	20%	25V
C640	1-136-601-11	FILM	0.01MF	10%	630V
C641	1-162-115-00	CERAMIC	330PF	10%	2KV
C642	1-123-024-21	ELECT	33MF		160V
C800	1-107-959-11	ELECT	3.3MF	20%	250V
C801	1-129-746-00	FILM	0.039MF	10%	400V
C803	1-136-109-00	FILM	0.68MF	5%	200V
C804	1-124-902-00	ELECT	0.47MF	20%	50V
C806	1-102-244-00	CERAMIC	220PF	10%	500V
C807	1-107-652-11	ELECT	10MF	20%	250V
C808	1-136-079-00	FILM	0.01MF	3%	2KV
C809	1-161-754-00	CERAMIC	0.001MF	10%	2KV
C810	1-129-702-00	FILM	0.001MF	10%	400V
C811	1-102-228-00	CERAMIC	470PF	10%	500V
C814	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V
C815	1-162-116-00	CERAMIC	680PF	10%	2KV
C816	1-162-114-00	CERAMIC	0.0047MF		2KV
C817	1-136-559-11	MYLAR	0.0047MF	10%	400V
C818	1-136-933-11	FILM	1MF	5%	100V
C819	1-162-318-11	CERAMIC	0.001MF	10%	500V
C820	1-126-949-11	ELECT	220MF	20%	35V
C822	1-104-696-11	FILM	0.015MF	10%	100V
C823	1-106-375-12	MYLAR	0.022MF	10%	250V
C824	1-106-367-00	MYLAR	0.01MF	10%	400V
C825	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C827	1-163-016-00	CERAMIC CHIP	0.0039MF	10%	50V
C828	1-111-230-11	ELECT	1MF	20%	160V
C829	1-163-078-11	CERAMIC CHIP	0.033MF	10%	25V
C851	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V

<FILTER>

CF001	1-579-125-11	VIBRATOR, CERAMIC
CF002	1-527-997-21	VIBRATOR, CRYSTAL
CF101	1-760-106-11	FILTER, CERAMIC
CF102	1-760-572-21	FILTER, CERAMIC

<CONNECTOR>

CN002	*1-564-515-11	PLUG, CONNECTOR 12P
CN003	*1-564-509-11	PLUG, CONNECTOR 6P
CN004	*1-564-510-11	PLUG, CONNECTOR 7P
CN005	*1-564-509-11	PLUG, CONNECTOR 6P
CN007	*1-564-508-11	PLUG, CONNECTOR 5P
CN009	*1-564-507-11	PLUG, CONNECTOR 4P
CN304	*1-564-506-11	PLUG, CONNECTOR 3P
CN601	*1-580-844-11	PIN, CONNECTOR (POWER)
CN602	*1-508-765-00	PIN, CONNECTOR (5mm PITCH) 3P
CN603	*1-508-786-00	PIN, CONNECTOR (5mm PITCH) 2P
CN604	1-695-915-11	TAB (CONTACT)
CN605	1-564-511-11	PLUG, CONNECTOR 8P
CN801	*1-580-798-11	CONNECTOR PIN (DY) 6P
CN802	*1-564-509-11	PLUG, CONNECTOR 6P

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REF. NO.	PART NO.	DESCRIPTION	REMARK
CN803	*1-564-509-11	PLUG, CONNECTOR 6P	
CN805	1-695-915-11	TAB (CONTACT)	
		<TRIMMER>	
CT102	1-410-790-41	INDUCTOR 0.56UH	
CT103	1-404-801-11	TRAP, CERAMIC	
CT104	1-409-327-00	TRAP, CERAMIC (6.5MHZ)	
		<DIODE>	
D002	8-719-991-33	DIODE 1SS133T-77	
D003	8-719-109-93	DIODE RD6.2ESB2	
D004	8-719-109-85	DIODE RD5.1ESB2	
D005	8-719-109-85	DIODE RD5.1ESB2	
D006	8-719-991-33	DIODE 1SS133T-77	
D010	8-719-200-82	DIODE 11ES2	
D011	8-719-991-33	DIODE 1SS133T-77	
D104	8-719-914-43	DIODE DAN202K	
D107	8-759-157-40	IC uPC574J	
D301	8-719-991-33	DIODE 1SS133T-77	
D302	8-719-914-43	DIODE DAN202K	
D303	8-719-991-33	DIODE 1SS133T-77	
D304	8-719-991-33	DIODE 1SS133T-77	
D305	8-719-991-33	DIODE 1SS133T-77	
D306	8-719-991-33	DIODE 1SS133T-77	
D310	8-719-988-62	DIODE 1SS355	
D311	8-719-991-33	DIODE 1SS133T-77	
D312	8-719-991-33	DIODE 1SS133T-77	
D401	8-719-109-97	DIODE RD6.8ESB2	
D402	8-719-109-97	DIODE RD6.8ESB2	
D403	8-719-109-97	DIODE RD6.8ESB2	
D404	8-719-109-97	DIODE RD6.8ESB2	
D405	8-719-110-09	DIODE RD8.2ESB3	
D406	8-719-110-13	DIODE RD9.1ESB2	
D407	8-719-109-97	DIODE RD6.8ESB2	
D408	8-719-110-14	DIODE RD9.1ESB3	
D409	8-719-109-97	DIODE RD6.8ESB2	
D501	8-719-302-43	DIODE EL1Z	
D601	8-719-025-88	DIODE GBU4JL-6088	
D603	8-719-991-33	DIODE 1SS133T-77	
D604	8-719-046-78	DIODE EG-1Z-V1	
D605	8-719-302-43	DIODE EL1Z	
D606	8-719-057-04	DIODE RGP10GL-6527	
D607	8-719-109-93	DIODE RD6.2ESB2	
D608	8-719-311-31	DIODE RU-1P	
D609	8-719-981-00	DIODE ERC81-004	
D610	8-719-057-04	DIODE RGP10GL-6527	
D611	8-719-312-61	DIODE EU-1ZV1	
D612	8-719-312-61	DIODE EU-1ZV1	
D613	8-719-971-65	DIODE RGP15J-6040	
D614	8-719-991-33	DIODE 1SS133T-77	
D615	8-719-914-43	DIODE DAN202K	
D616	8-719-991-33	DIODE 1SS133T-77	
D617	8-719-991-33	DIODE 1SS133T-77	
D618	8-719-991-33	DIODE 1SS133T-77	
D619	8-719-991-33	DIODE 1SS133T-77	
D620	8-719-046-78	DIODE EG-1Z-V1	
D621	8-719-947-06	DIODE RGP10JPKG23	
D801	8-719-950-57	DIODE BYD33G	
D802	8-719-302-43	DIODE EL1Z	
D803	8-719-945-80	DIODE ERC06-15S	
D804	8-719-028-72	DIODE RGP02-17EL-6433	
D805	8-719-928-08	DIODE ERD28-08S	
D806	8-719-302-43	DIODE EL1Z	
D807	8-719-914-43	DIODE DAN202K	
D808	8-719-302-43	DIODE EL1Z	
D811	8-719-991-33	DIODE 1SS133T-77	

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<FERRITE BEAD>	
FB001	1-414-135-11	INDUCTOR CHIP 0UH	
FB002	1-414-135-11	INDUCTOR CHIP 0UH	
FB003	1-414-135-11	INDUCTOR CHIP 0UH	
FB004	1-414-135-11	INDUCTOR CHIP 0UH	
FB005	1-414-135-11	INDUCTOR CHIP 0UH	
FB006	1-414-135-11	INDUCTOR CHIP 0UH	
FB007	1-414-135-11	INDUCTOR CHIP 0UH	
FB301	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB302	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB303	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB304	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB601	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB602	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB603	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB604	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB605	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB606	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB607	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
		<IC>	
IC001	8-752-873-30	IC CXP85460-027S	
IC002	8-759-343-77	IC S-3510ACFJ-TB	
IC005	8-759-378-21	IC ST24C16FB6	
IC006	8-759-520-90	IC PST572E	
IC101	8-759-333-19	IC TDA9806	
IC202	8-759-041-82	IC TDA1013B	
IC301	8-759-333-45	IC MC44002P	
IC302	8-759-333-46	IC MC44140P	
IC401	8-752-032-27	IC CXA1114P	
IC501	8-759-192-71	IC STV9379	
IC601	8-749-924-99	IC STR-S6707	
IC602	8-749-920-61	IC SE-135N	
IC603	8-749-924-92	IC TLP721(D4-)	
IC604	8-749-924-92	IC TLP721(D4-)	
IC605	8-749-920-43	IC SI-3050CA	
IC606	8-749-920-58	IC SI-3090CA	
IC607	8-759-335-72	IC uPC24A05HF	
		<JACK>	
J401	1-561-534-00	SOCKET, PIN 21P	
		<CHIP CONDUCTOR>	
JR002	1-216-295-91	CONDUCTOR, CHIP	
JR003	1-216-295-91	CONDUCTOR, CHIP	
JR100	1-216-295-91	CONDUCTOR, CHIP	
JR101	1-216-295-91	CONDUCTOR, CHIP	
JR102	1-216-295-91	CONDUCTOR, CHIP	
JR103	1-216-296-91	CONDUCTOR, CHIP	
JR104	1-216-295-91	CONDUCTOR, CHIP	
JR105	1-216-295-91	CONDUCTOR, CHIP	
JR106	1-216-296-91	CONDUCTOR, CHIP	
JR109	1-414-135-11	INDUCTOR CHIP 0UH	
JR110	1-414-135-11	INDUCTOR CHIP 0UH	
JR111	1-414-135-11	INDUCTOR CHIP 0UH	
JR112	1-414-135-11	INDUCTOR CHIP 0UH	
JR300	1-216-295-91	CONDUCTOR, CHIP	
JR301	1-216-295-91	CONDUCTOR, CHIP	
JR302	1-216-296-91	CONDUCTOR, CHIP	
JR303	1-216-295-91	CONDUCTOR, CHIP	
JR304	1-216-295-91	CONDUCTOR, CHIP	
JR305	1-216-295-91	CONDUCTOR, CHIP	
JR603	1-216-295-91	CONDUCTOR, CHIP	

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REF. NO.	PART NO.	DESCRIPTION	REMARK
		<COIL>	
L001	1-408-421-00	INDUCTOR 100UH	
L002	1-408-412-00	INDUCTOR 18UH	
L004	1-408-072-00	INDUCTOR 47UH	
L101	1-408-609-41	INDUCTOR 33UH	
L105	1-216-295-91	CONDUCTOR, CHIP	
L106	1-408-411-00	INDUCTOR 15UH	
L107	1-408-411-00	INDUCTOR 15UH	
L108	1-408-407-00	INDUCTOR 6.8UH	
L110	1-408-411-00	INDUCTOR 15UH	
L111	1-408-409-00	INDUCTOR 10UH	
L112	1-408-410-00	INDUCTOR 12UH	
L602	1-406-662-11	COIL, CHOKE 33UH	
L603	1-406-662-11	COIL, CHOKE 33UH	
L800	1-412-553-11	INDUCTOR 3.3mH	
L801	1-420-872-00	COIL, AIR-CORE	
L802	1-411-635-11	COIL, AIR-CORE	
L803	1-459-390-00	COIL (WITH CORE)	
L804	1-459-105-21	COIL(WITH CORE)	
L805	1-412-531-31	INDUCTOR 33UH	
L806	1-459-652-12	HLC	
		<IC LINK>	
PS601	⚠ 1-532-686-91	LINK, IC 2.7A/150V	
PS602	⚠ 1-532-686-91	LINK, IC 2.7A/150V	
PS603	⚠ 1-532-686-91	LINK, IC 2.7A/150V	
PS604	⚠ 1-532-686-91	LINK, IC 2.7A/150V	
		<TRANSISTOR>	
Q002	8-729-216-22	TRANSISTOR 2SA1162-G	
Q005	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q006	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q110	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q112	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q118	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q119	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q120	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q121	8-729-216-22	TRANSISTOR 2SA1162-G	
Q131	8-729-216-22	TRANSISTOR 2SA1162-G	
Q132	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q300	8-729-900-53	TRANSISTOR DTC114EK	
Q301	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q302	8-729-900-53	TRANSISTOR DTC114EK	
Q303	8-729-900-53	TRANSISTOR DTC114EK	
Q304	8-729-900-53	TRANSISTOR DTC114EK	
Q305	8-729-900-53	TRANSISTOR DTC114EK	
Q306	8-729-900-53	TRANSISTOR DTC114EK	
Q308	8-729-029-59	TRANSISTOR DTA144TSA-TP	
Q401	8-729-216-22	TRANSISTOR 2SA1162-G	
Q402	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q601	8-729-027-60	TRANSISTOR DTC144TKA-T146	
Q602	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q604	8-729-927-85	TRANSISTOR 2SB1496EF	
Q605	8-729-216-22	TRANSISTOR 2SA1162-G	
Q606	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q607	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q608	8-729-105-08	TRANSISTOR 2SA1330-O6	
Q609	8-729-216-22	TRANSISTOR 2SA1162-G	
Q610	8-729-900-53	TRANSISTOR DTC114EK	
Q611	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q612	8-729-026-41	TRANSISTOR 2SA933AS-QRT	
Q613	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q801	8-729-140-96	TRANSISTOR 2SD774-34	
Q802	8-729-033-85	TRANSISTOR S2000N-16E305A	
Q804	8-729-019-01	TRANSISTOR 2SD2394-EF	
Q805	8-729-140-96	TRANSISTOR 2SD774-34	

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R001	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R003	1-216-025-91	METAL GLAZE	100	5%	1/10W
R004	1-216-025-91	METAL GLAZE	100	5%	1/10W
R005	1-216-025-91	METAL GLAZE	100	5%	1/10W
R007	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R008	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R011	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R018	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R019	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R020	1-216-033-00	METAL GLAZE	220	5%	1/10W
R021	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R022	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R023	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R024	1-216-041-00	METAL GLAZE	470	5%	1/10W
R025	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R026	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R027	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R028	1-216-033-00	METAL GLAZE	220	5%	1/10W
R029	1-216-033-00	METAL GLAZE	220	5%	1/10W
R030	1-216-033-00	METAL GLAZE	220	5%	1/10W
R031	1-216-033-00	METAL GLAZE	220	5%	1/10W
R033	1-216-033-00	METAL GLAZE	220	5%	1/10W
R035	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R036	1-216-033-00	METAL GLAZE	220	5%	1/10W
R037	1-216-025-91	METAL GLAZE	100	5%	1/10W
R038	1-216-025-91	METAL GLAZE	100	5%	1/10W
R039	1-216-025-91	METAL GLAZE	100	5%	1/10W
R040	1-216-025-91	METAL GLAZE	100	5%	1/10W
R041	1-216-025-91	METAL GLAZE	100	5%	1/10W
R042	1-216-025-91	METAL GLAZE	100	5%	1/10W
R043	1-216-025-91	METAL GLAZE	100	5%	1/10W
R044	1-216-025-91	METAL GLAZE	100	5%	1/10W
R045	1-216-025-91	METAL GLAZE	100	5%	1/10W
R046	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R047	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R048	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R049	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R050	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R051	1-216-033-00	METAL GLAZE	220	5%	1/10W
R052	1-216-043-91	METAL GLAZE	560	5%	1/10W
R053	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R054	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R055	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R056	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R057	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R058	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R059	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R060	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R061	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R062	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R064	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R065	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R066	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R068	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R070	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R072	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R074	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R075	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R076	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R077	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R079	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R080	1-216-041-00	METAL GLAZE	470	5%	1/10W
R082	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R084	1-216-025-91	METAL GLAZE	100	5%	1/10W
R085	1-216-025-91	METAL GLAZE	100	5%	1/10W
R086	1-216-033-00	METAL GLAZE	220	5%	1/10W
R098	1-216-113-00	METAL GLAZE	470K	5%	1/10W

The componants identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R099	1-249-413-11	CARBON	470	5%	1/4W
R105	1-216-295-91	CONDUCTOR, CHIP			
R111	1-216-295-91	CONDUCTOR, CHIP			
R122	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R123	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R124	1-216-039-00	METAL GLAZE	390	5%	1/10W
R126	1-216-043-91	METAL GLAZE	560	5%	1/10W
R129	1-216-043-91	METAL GLAZE	560	5%	1/10W
R130	1-216-043-91	METAL GLAZE	560	5%	1/10W
R132	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R133	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R136	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R137	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R138	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R141	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R142	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R150	1-216-295-91	CONDUCTOR, CHIP			
R151	1-216-295-91	CONDUCTOR, CHIP			
R153	1-216-031-00	METAL GLAZE	180	5%	1/10W
R155	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R156	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R157	1-216-025-91	METAL GLAZE	100	5%	1/10W
R159	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R160	1-216-033-00	METAL GLAZE	220	5%	1/10W
R161	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R162	1-216-037-00	METAL GLAZE	330	5%	1/10W
R164	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R165	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R166	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R168	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R169	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R170	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R171	1-216-031-00	METAL GLAZE	180	5%	1/10W
R173	1-216-031-00	METAL GLAZE	180	5%	1/10W
R174	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R175	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R176	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R177	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R178	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R179	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R180	1-216-041-00	METAL GLAZE	470	5%	1/10W
R181	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R183	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R184	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R199	1-216-045-00	METAL GLAZE	680	5%	1/10W
R208	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R209	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R210	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R211	1-216-295-91	CONDUCTOR, CHIP			
R238	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R250	1-216-304-11	METAL GLAZE	3.3	5%	1/10W
R300	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R301	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R302	1-216-025-91	METAL GLAZE	100	5%	1/10W
R303	1-208-823-11	METAL CHIP	51K	0.50%	1/10W
R304	1-216-025-91	METAL GLAZE	100	5%	1/10W
R305	1-216-025-91	METAL GLAZE	100	5%	1/10W
R306	1-216-107-00	METAL GLAZE	270K	5%	1/10W
R307	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R308	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R309	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R310	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R311	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R312	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R313	1-216-045-00	METAL GLAZE	680	5%	1/10W
R314	1-216-045-00	METAL GLAZE	680	5%	1/10W
R315	1-216-045-00	METAL GLAZE	680	5%	1/10W
R316	1-216-033-00	METAL GLAZE	220	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION			REMARK
R317	1-216-033-00	METAL GLAZE	220	5%	1/10W
R318	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R319	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R320	1-216-115-00	METAL GLAZE	560K	5%	1/10W
R322	1-216-022-00	METAL GLAZE	75	5%	1/10W
R323	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R324	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R325	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R326	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R327	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R328	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R329	1-216-001-00	METAL GLAZE	10	5%	1/10W
R330	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R331	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R332	1-216-017-91	METAL GLAZE	47	5%	1/10W
R333	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R334	1-216-033-00	METAL GLAZE	220	5%	1/10W
R335	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R338	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R339	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R340	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R341	1-247-852-11	CARBON	7.5K	5%	1/4W
R342	1-216-041-00	METAL GLAZE	470	5%	1/10W
R343	1-216-041-00	METAL GLAZE	470	5%	1/10W
R344	1-216-041-00	METAL GLAZE	470	5%	1/10W
R345	1-216-041-00	METAL GLAZE	470	5%	1/10W
R351	1-216-292-11	METAL GLAZE	8.2M	5%	1/8W
R352	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R355	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R401	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R403	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R404	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R405	1-216-033-00	METAL GLAZE	220	5%	1/10W
R406	1-216-033-00	METAL GLAZE	220	5%	1/10W
R407	1-216-025-91	METAL GLAZE	100	5%	1/10W
R408	1-216-025-91	METAL GLAZE	100	5%	1/10W
R409	1-216-182-00	METAL GLAZE	220	5%	1/8W
R410	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R411	1-216-037-00	METAL GLAZE	330	5%	1/10W
R412	1-216-022-00	METAL GLAZE	75	5%	1/10W
R413	1-216-022-00	METAL GLAZE	75	5%	1/10W
R414	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R415	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R416	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R417	1-216-022-00	METAL GLAZE	75	5%	1/10W
R418	1-216-022-00	METAL GLAZE	75	5%	1/10W
R419	1-216-022-00	METAL GLAZE	75	5%	1/10W
R420	1-216-022-00	METAL GLAZE	75	5%	1/10W
R422	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R423	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R425	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R426	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R430	1-216-037-00	METAL GLAZE	330	5%	1/10W
R501	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R502	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R503	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R504	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R505	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R506	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R507	1-216-350-11	METAL OXIDE	1.2	5%	1W F
R508	1-215-865-11	METAL OXIDE	220	5%	1W F
R509	1-249-387-11	CARBON	3.3	5%	1/4W F
R601	⚠ 1-202-961-11	WIREWOUND	1.8	5%	10W
R602	⚠ 1-260-135-91	CARBON	1M	5%	1/2W
R603	⚠ 1-218-265-91	METAL	8.2M	5%	1W
R604	1-215-924-00	METAL OXIDE	15K	5%	3W F
R605	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R607	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R608	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W

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Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The componants identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION			REMARK
R609	1-215-924-00	METAL OXIDE	15K	5%	3W F
R610	1-215-924-00	METAL OXIDE	15K	5%	3W F
R611	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R612	1-249-420-11	CARBON	1.8K	5%	1/4W
R613	1-249-429-11	CARBON	10K	5%	1/4W
R614	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R615	1-247-807-31	CARBON	100	5%	1/4W
R617	1-249-420-11	CARBON	1.8K	5%	1/4W
R618	1-249-417-11	CARBON	1K	5%	1/4W
R619	1-249-401-11	CARBON	47	5%	1/4W
R620	1-214-929-00	CARBON	470K	5%	1/2W
R621	1-215-908-00	METAL OXIDE	33	5%	3W F
R622	1-202-933-61	FUSIBLE	0.1	10%	1/2W F
R623	1-215-882-00	METAL OXIDE	22	5%	2W F
R624	1-207-615-00	WIREWOUND	0.33	10%	2W F
R625	1-249-388-11	CARBON	3.9	5%	1/4W F
R626	1-249-407-11	CARBON	150	5%	1/4W
R627	1-249-420-11	CARBON	1.8K	5%	1/4W
R628	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R629	1-216-399-00	METAL OXIDE	6.8	5%	3W F
R631	1-215-900-11	METAL OXIDE	22K	5%	2W F
R633	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R634	1-249-417-11	CARBON	1K	5%	1/4W
R635	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R636	1-216-363-00	METAL OXIDE	0.33	5%	2W F
R637	1-249-412-11	CARBON	390	5%	1/4W F
R638	1-247-885-00	CARBON	180K	5%	1/4W
R639	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R640	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R641	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R642	1-247-887-00	CARBON	220K	5%	1/4W
R643	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R644	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R645	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R646	1-215-911-11	METAL OXIDE	100	5%	3W F
R800	1-215-912-11	METAL OXIDE	150	5%	3W F
R801	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R802	1-216-025-91	METAL GLAZE	100	5%	1/10W
R803	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R804	1-217-778-11	FUSIBLE	.1K	5%	1W F
R806	1-216-349-00	METAL OXIDE	1	5%	1W F
R807	1-216-013-00	METAL GLAZE	33	5%	1/10W
R808	1-202-833-11	SOLID	18K	10%	1/2W
R809	1-215-917-11	METAL OXIDE	1K	5%	3W F
R810	1-247-895-91	CARBON	470K	5%	1/4W
R811	1-215-890-11	METAL OXIDE	470	5%	2W F
R812	1-215-869-11	METAL OXIDE	1K	5%	1W F
R814	1-249-443-11	CARBON	0.47	5%	1/4W F
R815	1-249-441-11	CARBON	100K	5%	1/4W
R817	1-216-447-00	METAL OXIDE	27	5%	2W F
R818	1-202-813-00	SOLID	22K	10%	1/2W
R819	1-249-441-11	CARBON	100K	5%	1/4W
R820	1-249-935-11	CARBON	3.3K	5%	1/4W F
R821	1-260-123-11	CARBON	100K	5%	1/2W
R822	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R823	1-249-413-11	CARBON	470	5%	1/4W
R824	1-216-125-00	METAL GLAZE	1.5M	5%	1/10W
R826	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R828	1-216-117-00	METAL GLAZE	680K	5%	1/10W
		<VARIABLE RESISTOR>			
RV101	1-241-765-11	RES, ADJ, CARBON 22K			
RV801	1-241-630-11	RES, ADJ, CARBON 10K			
		<RELAY>			
RY600	1-755-018-11	RELAY			

REF. NO.	PART NO.	DESCRIPTION	REMARK
RY601	⚠ 1-755-018-11	RELAY	
		<FILTER>	
SF101	1-579-414-11	FILTER, SAWTOOTH WAVE	
		<TRANSFORMER>	
T101	1-403-686-11	COIL	
T601	⚠ 1-421-776-21	LFT	
T602	⚠ 1-421-776-21	LFT	
T603	⚠ 1-429-219-11	TRANSFORMER, CONVERTER (SRT)	
T801	1-437-090-31	HDT	
T802	⚠ 1-453-199-11	TRANSFORMER ASSY, FLYBACK	NX-1741//U2E
		<THERMISTOR>	
THP601	⚠ 1-809-827-21	THERMISTOR, POSITIVE	
		<TUNER>	
TU101	⚠ 8-598-331-00	TUNER BT-AC401	
		<CRYSTAL>	
X302	1-760-710-21	VIBRATOR, CRYSTAL	

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* A-1331-475-A C BOARD, COMPLETE

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<CAPACITOR>

C700	1-136-189-00	FILM	0.1MF	10%	250V
C701	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C702	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C703	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C704	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C705	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C706	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C707	1-136-189-00	FILM	0.1MF	10%	250V
C710	1-126-967-11	ELECT	47MF	20%	16V
C714	1-162-318-11	CERAMIC	0.001MF	10%	500V
C722	1-162-114-00	CERAMIC	0.0047MF		2KV

<CONNECTOR>

CNC71	* 1-564-509-11	PLUG, CONNECTOR 6P
CNC72	* 1-564-509-11	PLUG, CONNECTOR 6P
CNC73	1-695-915-11	TAB (CONTACT)
CNC76	1-695-915-11	TAB (CONTACT)

<DIODE>

D701	8-719-991-33	DIODE 1SS133T-77
D702	8-719-991-33	DIODE 1SS133T-77
D703	8-719-991-33	DIODE 1SS133T-77
D704	8-719-991-33	DIODE 1SS133T-77
D705	8-719-991-33	DIODE 1SS133T-77
D706	8-719-991-33	DIODE 1SS133T-77
D707	8-719-991-33	DIODE 1SS133T-77
D708	8-719-991-33	DIODE 1SS133T-77
D709	8-719-991-33	DIODE 1SS133T-77
D714	8-719-991-33	DIODE 1SS133T-77
D715	8-719-054-81	DIODE 1SS292T-77

The componants identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

C H3

REF. NO.	PART NO.	DESCRIPTION	REMARK
D716	8-719-991-33	DIODE 1SS133T-77	
D717	8-719-054-81	DIODE 1SS292T-77	
D718	8-719-991-33	DIODE 1SS133T-77	
D719	8-719-054-81	DIODE 1SS292T-77	
		<JACK>	
J701	⚠ 1-526-990-21	SOCKET, PICTURE TUBE	
		<TRANSISTOR>	
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q704	8-729-906-70	TRANSISTOR BF871-127	
Q705	8-729-906-70	TRANSISTOR BF871-127	
Q706	8-729-906-70	TRANSISTOR BF871-127	
Q707	8-729-200-17	TRANSISTOR 2SA1091-O	
Q708	8-729-200-17	TRANSISTOR 2SA1091-O	
Q709	8-729-200-17	TRANSISTOR 2SA1091-O	
		<RESISTOR>	
R701	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R702	1-249-417-11	CARBON 1K 5% 1/4W	
R705	1-216-158-00	METAL GLAZE 22 5% 1/8W	
R706	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R707	1-216-158-00	METAL GLAZE 22 5% 1/8W	
R708	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R709	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R710	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R711	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R714	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R715	1-249-417-11	CARBON 1K 5% 1/4W	
R716	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R717	1-247-758-11	CARBON 3.3K 5% 1/2W	
R718	1-247-758-11	CARBON 3.3K 5% 1/2W	
R719	1-247-758-11	CARBON 3.3K 5% 1/2W	
R720	1-216-487-11	METAL OXIDE 12K 5% 3W F	
R721	1-216-487-11	METAL OXIDE 12K 5% 3W F	
R722	1-216-487-11	METAL OXIDE 12K 5% 3W F	
R725	1-202-883-11	SOLID 680K 20% 1/2W	
R726	1-202-844-00	SOLID 330K 20% 1/2W	
R727	1-202-814-11	SOLID 33K 20% 1/2W	
R729	1-216-348-00	METAL OXIDE 0.82 5% 1W F	
R731	1-202-846-00	SOLID 470K 20% 1/2W	
R734	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R735	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R736	1-247-815-91	CARBON 220 5% 1/4W	
R744	1-247-756-11	CARBON 2.2K 5% 1/2W	
R745	1-247-756-11	CARBON 2.2K 5% 1/2W	
R746	1-247-756-11	CARBON 2.2K 5% 1/2W	
		<VARIABLE RESISTOR>	
RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M	
RV702	1-241-656-21	RES, ADJ, METAL FILM 110M	

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* A-1372-156-A H3 BOARD, COMPLETE
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REF. NO.	PART NO.	DESCRIPTION	REMARK
		<CAPACITOR>	
C350	1-126-160-11	ELECT 1MF 20% 50V	
C351	1-101-003-00	CERAMIC 0.0047MF 50V	
C352	1-101-003-00	CERAMIC 0.0047MF 50V	
C353	1-124-589-11	ELECT 47MF 20% 10V	
C354	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C355	1-101-003-00	CERAMIC 0.0047MF 50V	
		<CONNECTOR>	
CN350	*1-564-527-11	PLUG, CONNECTOR 12P	
CN351	*1-564-521-11	PLUG, CONNECTOR 6P	
CN352	*1-564-522-11	PLUG, CONNECTOR 7P	
CN353	*1-564-519-11	PLUG, CONNECTOR 4P	
		<DIODE>	
D350	8-719-992-24	DIODE SLR-305VC3F	
D351	8-719-992-26	DIODE SLR-305DC3F	
D352	8-719-992-24	DIODE SLR-305VC3F	
D353	8-719-992-24	DIODE SLR-305VC3F	
D354	8-719-992-24	DIODE SLR-305VC3F	
D355	8-719-921-54	DIODE MTZJ-6.2B	
D356	8-719-921-54	DIODE MTZJ-6.2B	
D357	8-719-921-54	DIODE MTZJ-6.2B	
D359	8-719-921-54	DIODE MTZJ-6.2B	
D360	8-719-921-54	DIODE MTZJ-6.2B	
		<JACK>	
J350	1-691-293-21	JACK	
J351	1-695-451-11	JACK, PIN 2P	
		<COIL>	
L350	1-410-509-11	INDUCTOR 10UH	
L352	1-410-509-11	INDUCTOR 10UH	
L353	1-414-142-11	INDUCTOR 1UH	
		<RESISTOR>	
R350	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R351	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R352	1-216-171-00	METAL GLAZE 75 5% 1/8W	
R353	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R354	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R355	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R356	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R357	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R358	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R359	1-216-027-00	METAL GLAZE 120 5% 1/10W	
R360	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R362	1-216-025-91	METAL GLAZE 100 5% 1/10W	
		<SWITCH>	
S350	1-572-200-11	SWITCH, KEYBOARD	
S351	1-572-200-11	SWITCH, KEYBOARD	
S352	1-572-200-11	SWITCH, KEYBOARD	
S353	1-572-908-11	SWITCH, SLIDE	
S355	1-572-200-11	SWITCH, KEYBOARD	
S356	1-572-200-11	SWITCH, KEYBOARD	
S357	1-572-907-11	SWITCH, SLIDE	
S358	1-554-118-21	SWITCH, PUSH (1 KEY)	

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H4

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REF. NO.	PART NO.	DESCRIPTION	REMARK
	* A-1372-157-A	H4 BOARD, COMPLETE **********	
		<CAPACITOR>	
C301	1-126-964-11	ELECT 10MF 20% 50V	
		<CONNECTOR>	
CN301	* 1-564-522-11	PLUG, CONNECTOR 7P	
		<DIODE>	
D301	8-719-921-54	DIODE MTZJ-6.2B	
		<IC>	
IC301	1-466-833-11	RAY-CATCHER BLOCK, REMOCON	
		<RESISTOR>	
R303	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R304	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R305	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R306	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R307	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R308	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R309	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R320	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R321	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
		<SWITCH>	
S301	1-572-200-11	SWITCH, KEYBOARD	
S302	1-572-200-11	SWITCH, KEYBOARD	
S303	1-572-200-11	SWITCH, KEYBOARD	
S304	1-572-200-11	SWITCH, KEYBOARD	
S305	1-572-200-11	SWITCH, KEYBOARD	
S306	1-572-200-11	SWITCH, KEYBOARD	
S307	1-572-200-11	SWITCH, KEYBOARD	
S308	1-572-200-11	SWITCH, KEYBOARD	
S309	1-572-200-11	SWITCH, KEYBOARD	
		**********	
		MISCELLANEOUS **********	
⚠	1-406-828-11	COIL, DEGAUSSING	
	1-452-032-00	MAGNET, DISK ; 10mm ϕ	
	1-452-094-00	MAGNET, ROTATABLE DISK ; 15mm ϕ	
	1-452-277-00	MAGNET, BMC	
	1-504-485-11	SPEAKER (8CM)	
⚠	1-765-286-11	CORD, POWER	
	1-775-044-11	CONNECTOR, DY (DOUBLE)	
	1-900-900-22	LEAD ASSY, FOCUS	
⚠	8-738-784-05	PIDTURE TUBE A51JXH61X	
⚠	8-451-295-45	DEFLECTION YOKE Y21PFA2BA	
⚠	8-738-784-41	ITC	
		**********	
		ACCESSORIES AND PACKING MATERIALS **********	
	3-858-249-11	MANUAL, INSTRUCTION	
	3-858-249-21	MANUAL, INSTRUCTION	
	3-858-249-31	MANUAL, INSTRUCTION	
	* 4-050-605-01	CUSHION (UPPER) (ASSY)	
	* 4-050-606-01	CUSHION (LOWER) (ASSY)	
	* 4-050-607-01	INDIVIDUAL CARTON	
	* 4-395-957-01	BAG, PROTECTION	
		REMOTE COMMANDER **********	
	1-473-389-11	REMOTE COMMANDER (RM-863)	
	9-900-029-01	POCKET, COVER (FOR RM-863)	

REF. NO.	PART NO.	DESCRIPTION			REMARK
	* A-1306-539-A	MA BOARD, COMPLETE **********			
	* 3-960-273-01	SPACER, TOP END			
	* 3-960-274-01	SPACER, LED			
		<CAPACITOR>			
C051	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C052	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C053	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C054	1-126-205-11	ELECT	47MF	20%	6.3V
C055	1-126-205-11	ELECT	47MF	20%	6.3V
C056	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C057	1-128-006-11	ELECT CHIP	4.7MF	20%	25V
C058	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C060	1-163-016-00	CERAMIC CHIP	0.0039MF	10%	50V
C101	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C102	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C104	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C109	1-126-205-11	ELECT	47MF	20%	6.3V
C110	1-126-205-11	ELECT	47MF	20%	6.3V
C111	1-128-004-11	ELECT CHIP	10MF	20%	16V
C112	1-126-205-11	ELECT	47MF	20%	6.3V
C113	1-126-205-11	ELECT	47MF	20%	6.3V
C115	1-126-205-11	ELECT	47MF	20%	6.3V
C116	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C118	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C123	1-126-204-11	ELECT	47MF	20%	16V
C124	1-126-397-11	ELECT	33MF	20%	25V
C125	1-126-204-11	ELECT	47MF	20%	16V
C126	1-126-204-11	ELECT	47MF	20%	16V
C127	1-126-397-11	ELECT	33MF	20%	25V
C131	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C201	1-126-205-11	ELECT	47MF	20%	6.3V
C202	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C203	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C204	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C205	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C206	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C251	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C252	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C253	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C254	1-126-205-11	ELECT	47MF	20%	6.3V
C255	1-126-206-11	ELECT	100MF	20%	6.3V
C256	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C306	1-128-004-11	ELECT CHIP	10MF	20%	16V
C307	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C308	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C355	1-126-395-11	ELECT	22MF	20%	16V
C356	1-126-395-11	ELECT	22MF	20%	16V
C357	1-128-011-11	ELECT CHIP	0.33MF	20%	50V
C358	1-128-004-11	ELECT CHIP	10MF	20%	16V
C359	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C360	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C361	1-163-010-11	CERAMIC CHIP	0.0012MF	10%	50V
C362	1-163-014-00	CERAMIC CHIP	0.0027MF	10%	50V
C363	1-128-008-11	ELECT CHIP	3.3MF	20%	35V
C364	1-128-006-11	ELECT CHIP	4.7MF	20%	25V
C365	1-104-551-11	FILM CHIP	0.01MF	5%	16V
C366	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C367	1-128-013-11	ELECT CHIP	1MF	20%	50V
C369	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C402	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C403	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C404	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C405	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C406	1-128-004-11	ELECT CHIP	10MF	20%	16V
C407	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V

REF. NO.	PART NO.	DESCRIPTION			REMARK
C408	1-126-205-11	ELECT	47MF	20%	6.3V
C410	1-126-395-11	ELECT	22MF	20%	16V
C411	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C412	1-104-556-11	FILM CHIP	0.027MF	5%	16V
C413	1-104-557-11	FILM CHIP	0.033MF	5%	16V
C415	1-128-057-11	ELECT	330MF	20%	6.3V
C416	1-126-205-11	ELECT	47MF	20%	6.3V
C417	1-126-205-11	ELECT	47MF	20%	6.3V
C418	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C419	1-164-344-11	CERAMIC CHIP	0.068MF	10%	25V
C420	1-126-206-11	ELECT	100MF	20%	6.3V
C421	1-126-395-11	ELECT	22MF	20%	16V
C422	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C423	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C425	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C426	1-128-006-11	ELECT CHIP	4.7MF	20%	25V
C427	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C429	1-128-006-11	ELECT CHIP	4.7MF	20%	25V
C430	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C431	1-126-205-11	ELECT	47MF	20%	6.3V
C432	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C433	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C434	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C435	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C436	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C437	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C438	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C439	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C440	1-128-004-11	ELECT CHIP	10MF	20%	16V
C441	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C442	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C443	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C486	1-126-204-11	ELECT	47MF	20%	16V
C488	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C489	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C490	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C491	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C507	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C511	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C512	1-128-057-11	ELECT	330MF	20%	6.3V
C515	1-126-205-11	ELECT	47MF	20%	6.3V
C516	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C517	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C518	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C520	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C601	1-137-431-11	FILM	560PF	5%	50V
C602	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C603	1-104-696-11	FILM	0.015MF	5%	100V
C604	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C605	1-126-204-11	ELECT	47MF	20%	16V
C651	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C653	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C654	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C655	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C656	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C657	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C658	1-107-682-11	CERAMIC CHIP	1MF	10%	16V
C659	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C660	1-128-004-11	ELECT CHIP	10MF	20%	16V
C661	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C662	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C663	1-107-682-11	CERAMIC CHIP	1MF	10%	16V
C664	1-107-682-11	CERAMIC CHIP	1MF	10%	16V
C665	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C667	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C668	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C669	1-126-217-11	ELECT	15MF	20%	10V
C671	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C672	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V

MA

REF. NO.	PART NO.	DESCRIPTION			REMARK
C673	1-107-682-11	CERAMIC CHIP	1MF	10%	16V
C674	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C676	1-128-004-11	ELECT CHIP	10MF	20%	16V
C677	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C678	1-165-321-11	CERAMIC CHIP	0.68MF	10%	16V
C679	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C680	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C681	1-107-682-11	CERAMIC CHIP	1MF	10%	16V
C682	1-107-682-11	CERAMIC CHIP	1MF	10%	16V
C683	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C684	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C686	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C687	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C688	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C689	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C690	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C691	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C692	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C693	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C694	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C695	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C696	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C697	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C699	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C700	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C701	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C702	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C721	1-164-161-11	CERAMIC CHIP	0.22MF	10%	25V
C722	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C723	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C801	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C802	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C806	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C807	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C808	1-126-206-11	ELECT	100MF	20%	6.3V
C809	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C810	1-126-206-11	ELECT	100MF	20%	6.3V
C811	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C813	1-164-336-11	CERAMIC CHIP	0.33MF		25V
C814	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C815	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C817	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C818	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C822	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C826	1-126-397-11	ELECT	33MF	20%	25V
C827	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C829	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C830	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C836	1-128-013-11	ELECT CHIP	1MF	20%	50V
C838	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C839	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C840	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C901	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C902	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C903	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C905	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C906	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C907	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C921	1-126-205-11	ELECT	47MF	20%	6.3V
C922	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V

<FILTER>

CF001	1-527-943-00	FILTER, CERAMIC

<CONNECTOR>

CN110	1-564-511-11	PLUG, CONNECTOR 8P
CN301	1-506-467-11	PIN, CONNECTOR 2P
CN302	*1-564-005-11	PIN, CONNECTOR 6P
CN303	1-506-467-11	PIN, CONNECTOR 2P
CN410	*1-766-716-11	CONNECTOR, BOARD TO BOARD 3P
CN412	*1-564-004-11	PIN, CONNECTOR 5P
CN413	*1-766-538-11	CONNECTOR, BOARD TO BOARD 8P
CN415	*1-766-537-11	CONNECTOR (HMD) 5P
CN501	*1-564-509-11	PLUG, CONNECTOR 6P
CN701	1-564-510-11	PLUG, CONNECTOR 7P
CN801	1-563-585-11	CONNECTOR, FLEXIBLE 8P
CN802	*1-560-892-00	PIN, CONNECTOR 4P

<DIODE>

D103	8-719-988-62	DIODE 1SS355
D122	8-719-420-90	DIODE MA8051-M
D123	8-719-988-62	DIODE 1SS355
D304	8-719-988-62	DIODE 1SS355
D401	8-719-988-62	DIODE 1SS355
D402	8-719-420-90	DIODE MA8051-M
D405	8-719-017-09	DIODE 02DZ6.2-TPH3
D406	8-719-017-09	DIODE 02DZ6.2-TPH3
D407	8-719-048-26	DIODE GL528V1
D408	8-719-017-03	DIODE 02DZ4.7-TPH3
D410	8-719-422-97	DIODE MA8091-M
D501	8-719-988-62	DIODE 1SS355
D502	8-719-053-40	DIODE SC016-2-TE12RA
D503	8-719-053-40	DIODE SC016-2-TE12RA
D651	8-719-988-62	DIODE 1SS355
D653	8-719-988-62	DIODE 1SS355
D655	8-719-988-62	DIODE 1SS355
D656	8-719-914-43	DIODE DAN202K
D657	8-719-988-62	DIODE 1SS355
D802	8-719-988-62	DIODE 1SS355
D804	8-719-988-62	DIODE 1SS355

<IC>

IC051	8-759-996-63	IC BA7025L
IC101	8-759-189-48	IC PQ12RE11
IC102	8-759-251-39	IC PQ12TZ1U
IC301	8-759-268-02	IC BA7796FS-E2
IC403	8-759-702-02	IC NJM062M
IC406	8-759-246-14	IC TA8823N
IC407	8-759-100-95	IC uPC324G2
IC410	8-759-988-58	IC BA6209N
IC501	8-752-876-66	IC CXP87248A-027Q
IC505	8-759-097-80	IC HD49783FP
IC651	8-759-349-60	IC LA7438AM-MPB
IC652	8-752-373-18	IC CXL1511M-T6
IC801	8-759-267-77	IC HA118291ANT

<COIL>

L051	1-412-064-11	INDUCTOR CHIP 100UH
L103	1-412-064-11	INDUCTOR CHIP 100UH
L104	1-412-064-11	INDUCTOR CHIP 100UH
L105	1-412-064-11	INDUCTOR CHIP 100UH
L106	1-412-064-11	INDUCTOR CHIP 100UH
L108	1-412-958-21	INDUCTOR 39UH
L201	1-410-656-11	INDUCTOR CHIP 150UH
L202	1-412-064-11	INDUCTOR CHIP 100UH
L203	1-412-953-11	INDUCTOR 15UH
L251	1-412-058-11	INDUCTOR CHIP 10UH
L252	1-412-064-11	INDUCTOR CHIP 100UH
L253	1-412-058-11	INDUCTOR CHIP 10UH
L304	1-412-058-11	INDUCTOR CHIP 10UH
L305	1-412-957-11	INDUCTOR 33UH
L401	1-414-080-11	INDUCTOR 22UH

The componants identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

MA

REF. NO.	PART NO.	DESCRIPTION	REMARK
L403	1-412-064-11	INDUCTOR CHIP 100UH	
L505	1-412-054-21	INDUCTOR CHIP 2.2UH	
L601	1-410-687-11	INDUCTOR 1.2mH	
L651	1-412-958-21	INDUCTOR 39UH	
L652	1-412-959-11	INDUCTOR 47UH	
L653	1-412-958-21	INDUCTOR 39UH	
L654	1-412-943-11	INDUCTOR 2.2UH	
L801	1-410-658-31	INDUCTOR CHIP 220UH	
L803	1-412-064-11	INDUCTOR CHIP 100UH	
L804	1-412-064-11	INDUCTOR CHIP 100UH	
L810	1-410-657-21	INDUCTOR CHIP 180UH	
L812	1-412-064-11	INDUCTOR CHIP 100UH	
L901	1-412-953-11	INDUCTOR 15UH	
L902	1-412-953-11	INDUCTOR 15UH	
L903	1-412-064-11	INDUCTOR CHIP 100UH	
L905	1-412-957-11	INDUCTOR 33UH	
L906	1-412-951-11	INDUCTOR 10UH	
L907	1-412-958-21	INDUCTOR 39UH	
		<PHOTO COUPLER>	
PH401	8-749-010-19	PHOTO INTERRUPTER GP3S113	
PH402	8-749-010-20	PHOTO INTERRUPTER GP3S114	
		<IC LINK>	
PS121	⚠ 1-533-282-21	LINK, IC	
PS201	⚠ 1-576-124-21	LINK, IC	
PS301	⚠ 1-576-122-21	LINK, IC	
PS401	⚠ 1-576-124-21	LINK, IC	
PS402	⚠ 1-576-122-21	LINK, IC	
		<TRANSISTOR>	
Q051	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q052	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q108	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q110	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q112	8-729-900-53	TRANSISTOR DTC114EK	
Q123	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q125	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q126	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q127	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q201	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q251	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q304	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q305	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q351	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q503	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q505	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q601	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q602	8-729-027-24	TRANSISTOR DTA114TKA-T146	
Q603	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q653	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q654	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q655	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q656	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q657	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q658	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q659	8-729-901-47	TRANSISTOR DTA143EK	
Q664	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q665	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q667	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q668	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q670	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q671	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q721	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q722	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q723	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q724	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q725	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q851	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q852	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q853	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q854	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q855	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q861	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q862	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q901	8-729-216-21	TRANSISTOR 2SA1162-Y	
Q904	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q905	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q906	8-729-271-21	TRANSISTOR 2SC2712-Y	
Q907	8-729-027-59	TRANSISTOR DTC144EKA-T146	
		<RESISTOR>	
R051	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R052	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R053	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R054	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R055	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R056	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R057	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R101	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R102	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R103	1-216-295-91	CONDUCTOR, CHIP	
R110	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R122	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R123	1-216-033-00	METAL GLAZE 220 5%	1/10W
R124	1-216-033-00	METAL GLAZE 220 5%	1/10W
R125	1-216-033-00	METAL GLAZE 220 5%	1/10W
R127	1-216-041-00	METAL GLAZE 470 5%	1/10W
R129	1-216-099-00	METAL GLAZE 120K 5%	1/10W
R132	1-216-295-91	CONDUCTOR, CHIP	
R134	1-216-025-91	METAL GLAZE 100 5%	1/10W
R135	1-216-033-00	METAL GLAZE 220 5%	1/10W
R137	1-218-262-11	METAL GLAZE 2.7 10%	1/2W
R138	1-218-262-11	METAL GLAZE 2.7 10%	1/2W
R139	1-218-262-11	METAL GLAZE 2.7 10%	1/2W
R140	1-218-262-11	METAL GLAZE 2.7 10%	1/2W
R203	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R204	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R205	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R206	1-216-047-91	METAL GLAZE 820 5%	1/10W
R251	1-216-017-91	METAL GLAZE 47 5%	1/10W
R252	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R253	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R254	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R255	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R256	1-216-095-00	METAL GLAZE 82K 5%	1/10W
R302	1-216-295-91	CONDUCTOR, CHIP	
R303	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R332	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R333	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R334	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R335	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R336	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R337	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R353	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R363	1-216-001-00	METAL GLAZE 10 5%	1/10W
R371	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R372	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R373	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R374	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R375	1-216-099-00	METAL GLAZE 120K 5%	1/10W
R376	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R378	1-216-041-00	METAL GLAZE 470 5%	1/10W
R379	1-216-109-00	METAL GLAZE 330K 5%	1/10W

MA

REF. NO.	PART NO.	DESCRIPTION		REMARK
R380	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R381	1-216-129-00	METAL GLAZE 2.2M	5%	1/10W
R384	1-216-093-00	METAL GLAZE 68K	5%	1/10W
R385	1-216-071-00	METAL GLAZE 8.2K	5%	1/10W
R387	1-216-304-11	METAL GLAZE 3.3	5%	1/10W
R388	1-216-295-91	CONDUCTOR, CHIP		
R389	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R390	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R391	1-216-295-91	CONDUCTOR, CHIP		
R401	1-216-109-00	METAL GLAZE 330K	5%	1/10W
R402	1-216-109-00	METAL GLAZE 330K	5%	1/10W
R403	1-216-059-00	METAL GLAZE 2.7K	5%	1/10W
R404	1-216-025-91	METAL GLAZE 100	5%	1/10W
R405	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W
R406	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R407	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R408	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R409	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R410	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R411	1-216-093-00	METAL GLAZE 68K	5%	1/10W
R412	1-216-075-00	METAL GLAZE 12K	5%	1/10W
R413	1-216-083-00	METAL GLAZE 27K	5%	1/10W
R414	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R415	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R416	1-216-103-00	METAL GLAZE 180K	5%	1/10W
R417	1-216-079-00	METAL GLAZE 18K	5%	1/10W
R418	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R419	1-216-689-11	METAL GLAZE 39K	5%	1/10W
R420	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R421	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R422	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R430	1-216-609-11	METAL GLAZE 18	5%	1/10W
R431	1-216-609-11	METAL GLAZE 18	5%	1/10W
R432	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R433	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R435	1-216-093-00	METAL GLAZE 68K	5%	1/10W
R436	1-216-119-00	METAL GLAZE 820K	5%	1/10W
R437	1-216-097-91	METAL GLAZE 100K	5%	1/10W
R438	1-216-097-91	METAL GLAZE 100K	5%	1/10W
R439	1-216-085-00	METAL GLAZE 33K	5%	1/10W
R440	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W
R441	1-216-037-00	METAL GLAZE 330	5%	1/10W
R443	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W
R445	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R446	1-216-113-00	METAL GLAZE 470K	5%	1/10W
R447	1-216-609-11	METAL GLAZE 18	5%	1/10W
R448	1-216-609-11	METAL GLAZE 18	5%	1/10W
R449	1-216-111-91	METAL GLAZE 390K	5%	1/10W
R450	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R451	1-216-111-91	METAL GLAZE 390K	5%	1/10W
R453	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R455	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R456	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W
R457	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W
R458	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R459	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R460	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R461	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R465	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W
R466	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W
R470	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R471	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R481	1-216-295-91	CONDUCTOR, CHIP		
R482	1-216-295-91	CONDUCTOR, CHIP		
R483	1-216-295-91	CONDUCTOR, CHIP		
R499	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R501	1-216-045-00	METAL GLAZE 680	5%	1/10W
R502	1-216-089-91	METAL GLAZE 47K	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION		REMARK
R507	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R508	1-216-025-91	METAL GLAZE 100	5%	1/10W
R509	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R510	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R511	1-216-025-91	METAL GLAZE 100	5%	1/10W
R512	1-216-053-00	METAL GLAZE 1.5K	5%	1/10W
R513	1-216-025-91	METAL GLAZE 100	5%	1/10W
R519	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R521	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R522	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R523	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R524	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R525	1-216-077-00	METAL GLAZE 15K	5%	1/10W
R526	1-216-063-91	METAL GLAZE 3.9K	5%	1/10W
R527	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W
R528	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R529	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W
R530	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W
R531	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W
R532	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R533	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R534	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R535	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R536	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R537	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R538	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W
R539	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R540	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R542	1-216-077-00	METAL GLAZE 15K	5%	1/10W
R545	1-216-295-91	CONDUCTOR, CHIP		
R547	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R560	1-216-689-11	METAL GLAZE 39K	5%	1/10W
R570	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R571	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R572	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R573	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R574	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R575	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R576	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R577	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R602	1-216-081-00	METAL GLAZE 22K	5%	1/10W
R651	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R652	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R654	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R656	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R657	1-216-077-00	METAL GLAZE 15K	5%	1/10W
R660	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R661	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R662	1-216-081-00	METAL GLAZE 22K	5%	1/10W
R663	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R665	1-216-053-00	METAL GLAZE 1.5K	5%	1/10W
R666	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R667	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W
R668	1-216-037-00	METAL GLAZE 330	5%	1/10W
R669	1-216-295-91	CONDUCTOR, CHIP		
R675	1-216-025-91	METAL GLAZE 100	5%	1/10W
R677	1-216-071-00	METAL GLAZE 8.2K	5%	1/10W
R682	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W
R683	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R685	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R686	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R687	1-216-075-00	METAL GLAZE 12K	5%	1/10W
R688	1-216-095-00	METAL GLAZE 82K	5%	1/10W
R689	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R692	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R701	1-216-295-91	CONDUCTOR, CHIP		
R705	1-216-121-91	METAL GLAZE 1M	5%	1/10W
R707	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R708	1-216-295-91	CONDUCTOR, CHIP		

MA

REF. NO.	PART NO.	DESCRIPTION		REMARK
R709	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R710	1-216-041-00	METAL GLAZE 470	5%	1/10W
R711	1-216-079-00	METAL GLAZE 18K	5%	1/10W
R712	1-216-083-00	METAL GLAZE 27K	5%	1/10W
R713	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R714	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W
R715	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R716	1-216-033-00	METAL GLAZE 220	5%	1/10W
R717	1-216-295-91	CONDUCTOR, CHIP		
R718	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R719	1-216-051-00	METAL GLAZE 1.2K	5%	1/10W
R721	1-216-081-00	METAL GLAZE 22K	5%	1/10W
R722	1-216-295-91	CONDUCTOR, CHIP		
R723	1-216-295-91	CONDUCTOR, CHIP		
R724	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R725	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R726	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W
R727	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R728	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R729	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R801	1-216-021-00	METAL GLAZE 68	5%	1/10W
R802	1-216-037-00	METAL GLAZE 330	5%	1/10W
R805	1-216-001-00	METAL GLAZE 10	5%	1/10W
R806	1-216-021-00	METAL GLAZE 68	5%	1/10W
R811	1-216-037-00	METAL GLAZE 330	5%	1/10W
R822	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R823	1-216-081-00	METAL GLAZE 22K	5%	1/10W
R835	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R836	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R851	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W
R852	1-216-059-00	METAL GLAZE 2.7K	5%	1/10W
R853	1-216-079-00	METAL GLAZE 18K	5%	1/10W
R856	1-216-025-91	METAL GLAZE 100	5%	1/10W
R858	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W
R859	1-216-089-91	METAL GLAZE 47K	5%	1/10W
R861	1-216-053-00	METAL GLAZE 1.5K	5%	1/10W
R862	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W
R863	1-216-047-91	METAL GLAZE 820	5%	1/10W
R864	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R865	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R866	1-216-075-00	METAL GLAZE 12K	5%	1/10W
R883	1-216-025-91	METAL GLAZE 100	5%	1/10W
R884	1-216-025-91	METAL GLAZE 100	5%	1/10W
R901	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R902	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W
R903	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W
R904	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R905	1-216-037-00	METAL GLAZE 330	5%	1/10W
R906	1-216-047-91	METAL GLAZE 820	5%	1/10W
R908	1-216-041-00	METAL GLAZE 470	5%	1/10W
R909	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R910	1-216-041-00	METAL GLAZE 470	5%	1/10W
R911	1-216-045-00	METAL GLAZE 680	5%	1/10W
R912	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R913	1-216-037-00	METAL GLAZE 330	5%	1/10W
R914	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R915	1-216-049-91	METAL GLAZE 1K	5%	1/10W
R916	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R917	1-216-037-00	METAL GLAZE 330	5%	1/10W

<VARIABLE RESISTOR>

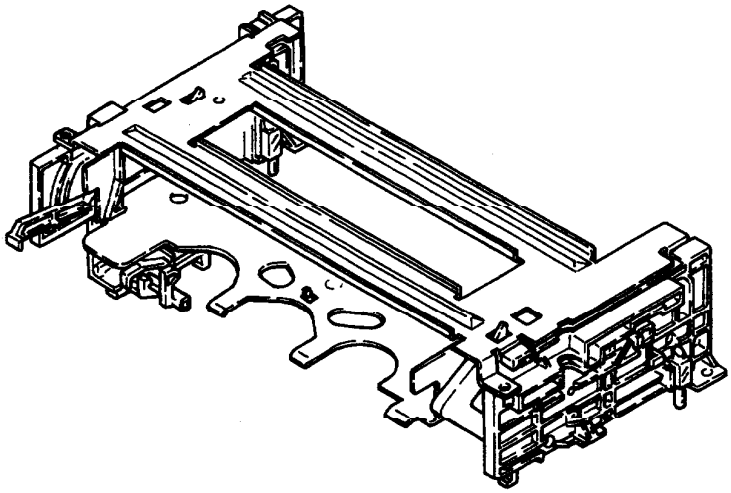
RV051	1-241-391-11	RES, ADJ, METAL GLAZE 470
RV301	1-241-396-11	RES, ADJ, METAL GLAZE 22K
RV502	1-241-397-11	RES, ADJ, METAL GLAZE 47K
RV652	1-241-394-11	RES, ADJ, METAL GLAZE 4.7K

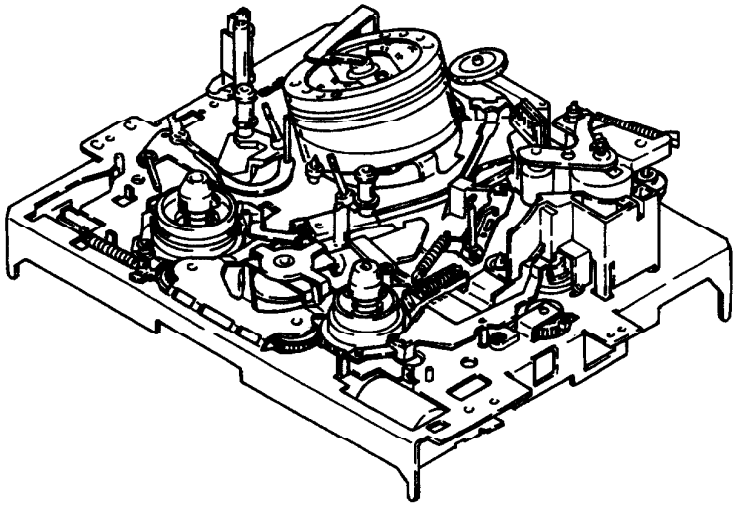
REF. NO.	PART NO.	DESCRIPTION	REMARK
		<SWITCH>	
S401	1-570-953-11	SWITCH, PUSH (1 KEY)	
		<TRANSFORMER>	
T001	1-409-467-11	COIL (TRAP 7.8K)	
T301	1-423-414-11	TRANSFORMER, BIAS OSCILLATION	
		<TEST PIN>	
TP401	1-535-570-11	PIN, TERMINAL	
		<CRYSTAL>	
X501	1-579-070-41	VIBRATOR, CRYSTAL	
X652	1-579-608-11	VIBRATOR, CRYSTAL	

VHS MECHANICAL ADJUSTMENT MANUAL IV

H MECHANISM

Please use with the service manual.





MICROFILM

VHS VIDEO CASSETTE RECORDER

SONY

TABLE OF CONTENTS

Section	Title	Page
1.	PREPARATION FOR MECHANISM CHECK ADJUSTMENT AND REPLACEMENT	
1-1.	Loading and Threading Procedure When the Power Turns Off (Fig. 1-1)	3
1-1-1.	Loading and Threading Procedure With Hands	3
1-1-2.	Loading and Threading Procedure With Regulated DC Power Supply	3
1-2.	Unloading and Unthreading Procedure When the Power Turns Off (Figs. 1-2 and 1-3)	4
1-2-1.	Unloading and Unthreading Procedure With Hands	4
1-2-2.	Unloading and Unthreading Procedure With Regulated DC Power Supply	4
1-3.	How to Complete Threading Without Cassette Compartment (Fig. 1-4)	6
2.	PERIODIC CHECK AND REPLACEMENT	
2-1.	Cleaning of Rotating Head Disk Assembly	7
2-2.	Cleaning of the Tape Movement System	7
2-3.	Cleaning the Drive System	7
2-4.	Periodic Check Items	8
2-5.	Tools and Fixtures Required for Servicing	9
3.	MAINLY MECHANICAL PARTS REPLACEMENT	
3-1.	FL Block Assembly (Fig. 3-1)	10
3-2.	Drum Assembly (Fig. 3-2)	11
3-3.	Timing Belt (Fig. 3-3)	12
3-4.	Cap Brake Assembly (Fig. 3-4)	13
3-5.	TG2 Roller, FE Head Assembly (Fig. 3-5)	14
3-6.	Pinch Press Block Assembly, Elevator Gear (Fig. 3-6)	15
3-7.	Ace Block Assembly (Fig. 3-7)	16
3-8.	TG3, TG6 Guide Roller Assemblies (Fig. 3-8)	17
3-9.	Capstan Motor (Fig. 3-11)	19
3-10.	Main Brake Assemblies S and T (Fig. 3-12)	20
3-11.	Soft Brake T Assembly (Fig. 3-13)	21
3-12.	RVS Brake Arm Assembly, Reel Table (T) Assembly (Fig. 3-14)	22
3-13.	TG6 Assembly (Fig. 3-15)	23
3-14.	TG8 Holder (Fig. 3-16)	24
3-15.	TG8 and Press Gears (Fig. 3-17)	25
3-16.	Cam Motor Chassis Block Assembly, Upper/Lower Communication Gear (Fig. 3-18)	26
3-17.	Rotary Encoder Switch (Fig. 3-19)	27
3-18.	Main Slider (Fig. 3-20)	28
3-19.	Shuttle T Block and Loading Gear T Block Assemblies (Fig. 3-21)	29
3-20.	Shuttle S Block and Loading Gear S Block Assemblies (Fig. 3-22)	30
3-21.	Reel Table (S) Assembly (Fig. 3-23)	31
3-22.	TG1 Assembly (Fig. 3-24)	32
3-23.	S Winding Block Assembly (Fig. 3-25)	33
3-24.	Trigger Lever and RKB Block Assemblies (Fig. 3-26)	34
4.	ADJUSTMENT	
4-1.	Tape Path Adjustment	35
4-1-1.	Tension Regulator (TG1) Position/ Tension Adjustment (Fig. 4-1)	35
4-1-2.	TG8 Guide Roller Height Adjustment (Fig. 4-2)	36
4-1-3.	Height Adjustment of Guide Rollers No. 3 and No. 6 (Fig. 4-3)	36
4-1-4.	Ace Head Assembly Adjustment (Rough Adjustment) (Figs. 4-4 and 4-5)	37
4-1-5.	Ace Head Assembly Adjustment (Precision Adjustment)	38
4-1-6.	X-Value Adjustment	38
4-1-7.	Adjustments After Replacing the Drum (Video Head)	40
4-1-8.	Checking the Tension and Torque	42

1. PREPARATION FOR MECHANISM CHECK ADJUSTMENT AND REPLACEMENT

Refer to the service manual, "DISASSEMBLY" for removal of the cabinet and boards.

1-1. LOADING AND THREADING PROCEDURE WHEN THE POWER TURNS OFF (Fig. 1-1)

1-1-1. LOADING AND THREADING PROCEDURE WITH HANDS

1) Turn cam motor in the arrow Ⓐ direction until loading and threading are end.

1-1-2. LOADING AND THREADING PROCEDURE WITH REGULATED DC POWER SUPPLY

1) Applying approx. +9 V (300 mA) to cam motor with regulated DC power supply makes it loading and threading.

Note: When loading and threading without cassette, claws are caught in four positions as following figure (in the order ① → ② → ③ → ④).
So release them with hands.

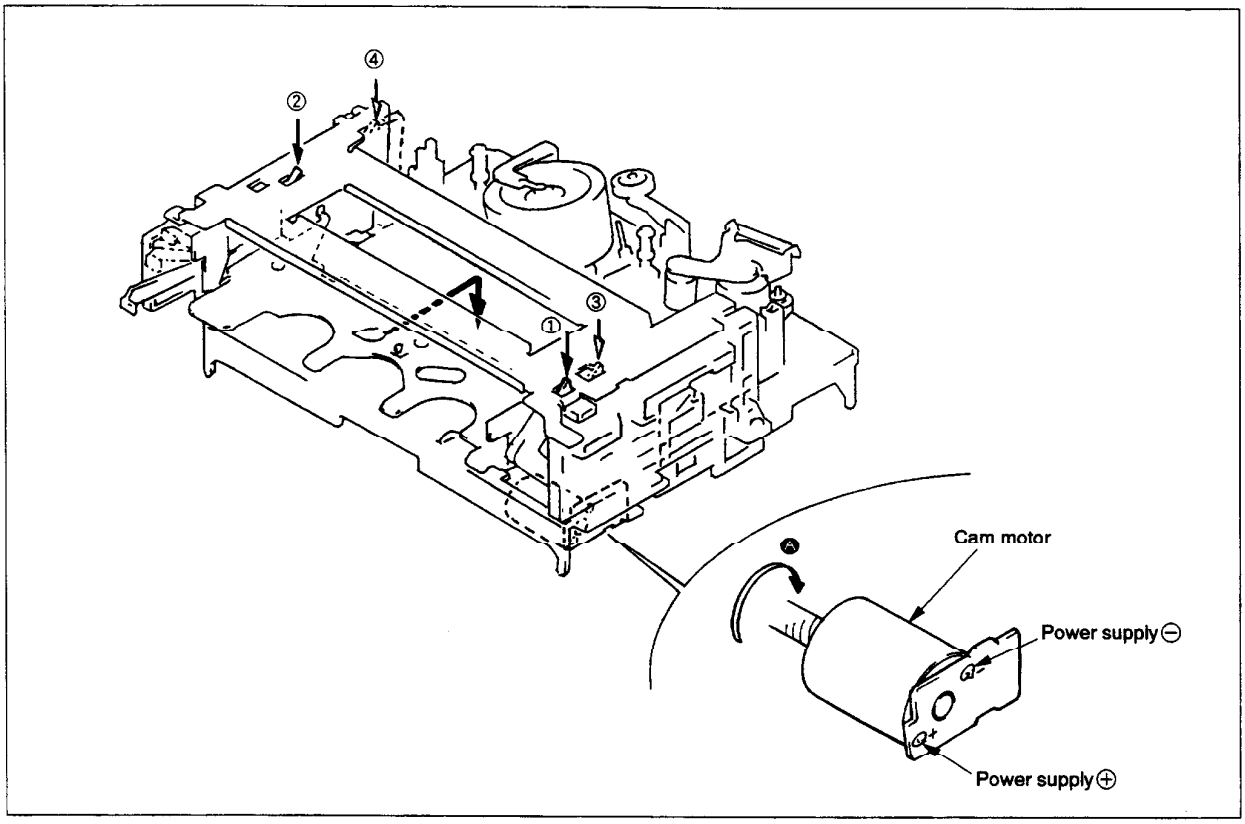


Fig. 1-1

1-2. UNLOADING AND UNTHREADING PROCEDURE WHEN THE POWER TURNS OFF (Figs. 1-2 and 1-3)

1-2-1. UNLOADING AND UNTHREADING PROCEDURE WITH HANDS

1) Turn cam motor in the arrow Ⓑ direction until unthreading is end.
2) Turn capstan motor in the arrow Ⓒ direction to take up tape in cassette.
3) Turn cam motor in the arrow Ⓑ direction until unloading is end.

1-2-2. UNLOADING AND UNTHREADING PROCEDURE WITH REGULATED DC POWER SUPPLY

1) Apply approx. +9 V (300 mA) to contrary polarities of cam motor.
2) Unthreading operation begins, tape guides return to their original positions (Unthreading operation is end but tape remains), then stop cam motor by turning power off.

Note: When unloading begins and cassette lid is closed, turn cam motor in the arrow Ⓐ direction to open tape guard.

3) Turn capstan motor in the arrow Ⓒ direction to take up tape in cassette.

Note: That tape is not caught at pinch roller. (Fig. 1-3)

4) Check that tape is not loosened completely, and apply approx. +9 V (300 mA) to contrary polarities of cam motor with regulated DC power supply. (Fig. 1-2)

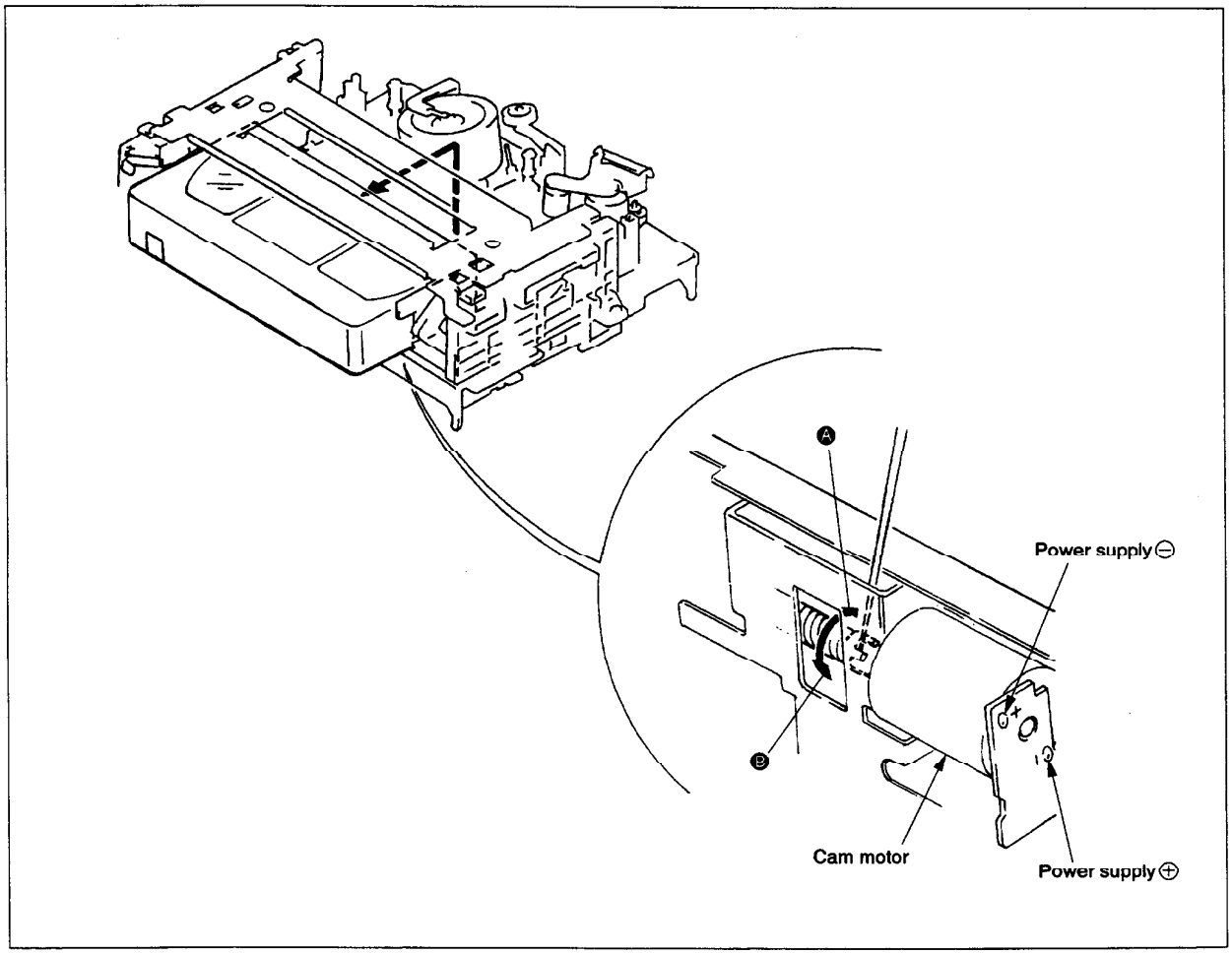


Fig. 1-2

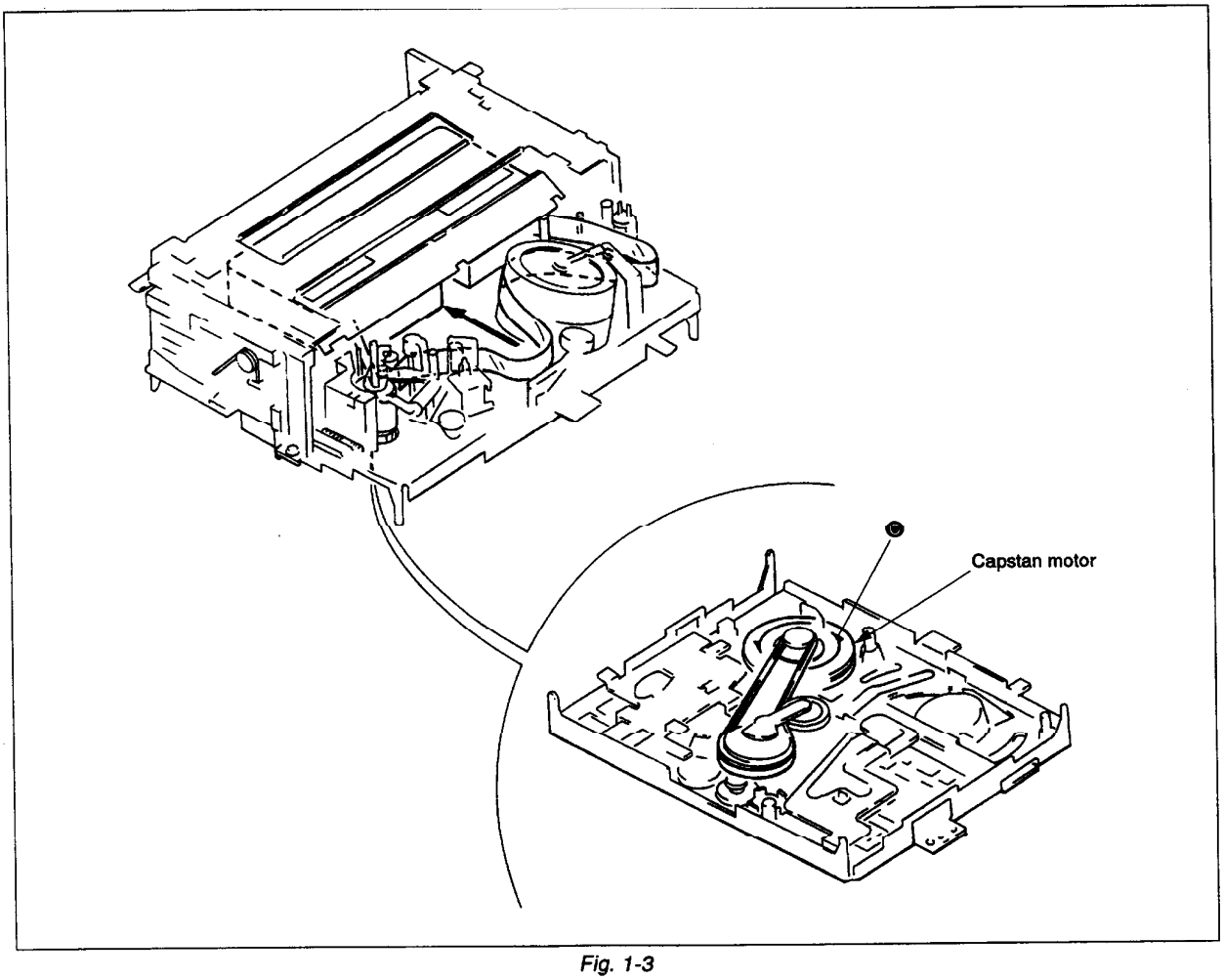


Fig. 1-3

1-3. HOW TO COMPLETE THREADING WITHOUT CASSETTE COMPARTMENT (Fig. 1-4)

Note 1: Put the FL block assembly removed the FL top plate on the bottom not to put dust or grease the top sensor and the end sensor luminous plates or not to scratch them. (Fig. A)

1) Pull out AC plug from wall outlet.
2) Shade near the end and top sensors with a black masking tape on the like.
3) Press cassette in/rec proof switch with a tip of screwdriver or the like.
4) Connect AC plug to wall outlet.
5) Release cassette in/rec proof switch by putting off a tip of screwdriver or the like.
   (At this time, power turns on, rewind operates for 10 seconds, after that power turns off.)

Note 2: In this condition, each mode can be set to video cassette recorder. (including recording mode)
However, fast forward should be done after rewinding for 15 seconds or more.

Note 3: After above mentioned operation, be sure to return the mode in the following order.

1) Remove the tape near the end and top sensors.
2) Pull out AC plug from wall outlet to reset the system control microcomputer.

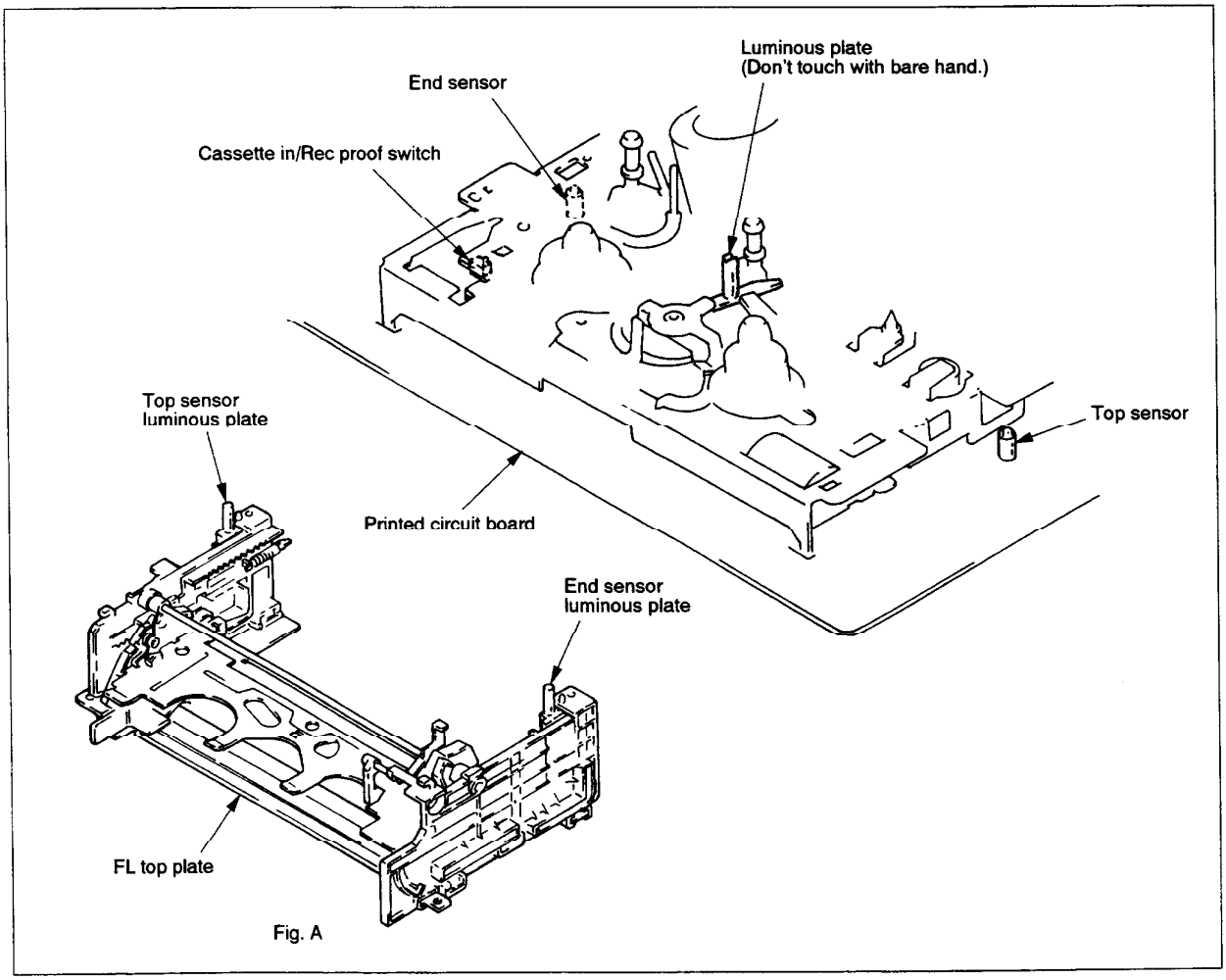


Fig. 1-4

2. PERIODIC CHECK AND REPLACEMENT

In order to obtain the best performance from this unit and make full use of its capabilities, and to extend the life of the unit and tapes, it is recommended that the following periodic checks and maintenance be performed.

* The following must be done after every repair regardless of how many hours the user has operated the machine.

2-1. CLEANING OF ROTATING HEAD DISK ASSEMBLY

1) Press a chamois cloth (Jig Ref. No. J-9) which has been dipped in cleaning fluid (Jig Ref. No. J-8) lightly against the rotating drum assembly, then do the cleaning by slowly rotating the rotating head disk by hand. (Never try to clean by using the motor to turn it.)
2) Never try to clean by moving the chamois cloth at a vertical angle to the head tip. There is a very great danger of damaging the head tip if this is done.

2-2. CLEANING OF THE TAPE MOVEMENT SYSTEM

1) Clean the surfaces which the tape contacts during its movement (tape guide, drum assembly surface, capstan, pinch roller, etc.) with a chamois cloth that has been dipped in cleaning fluid.

2-3. CLEANING THE DRIVE SYSTEM

1) Clean the driving parts with a cloth that been dipped in cleaning fluid.

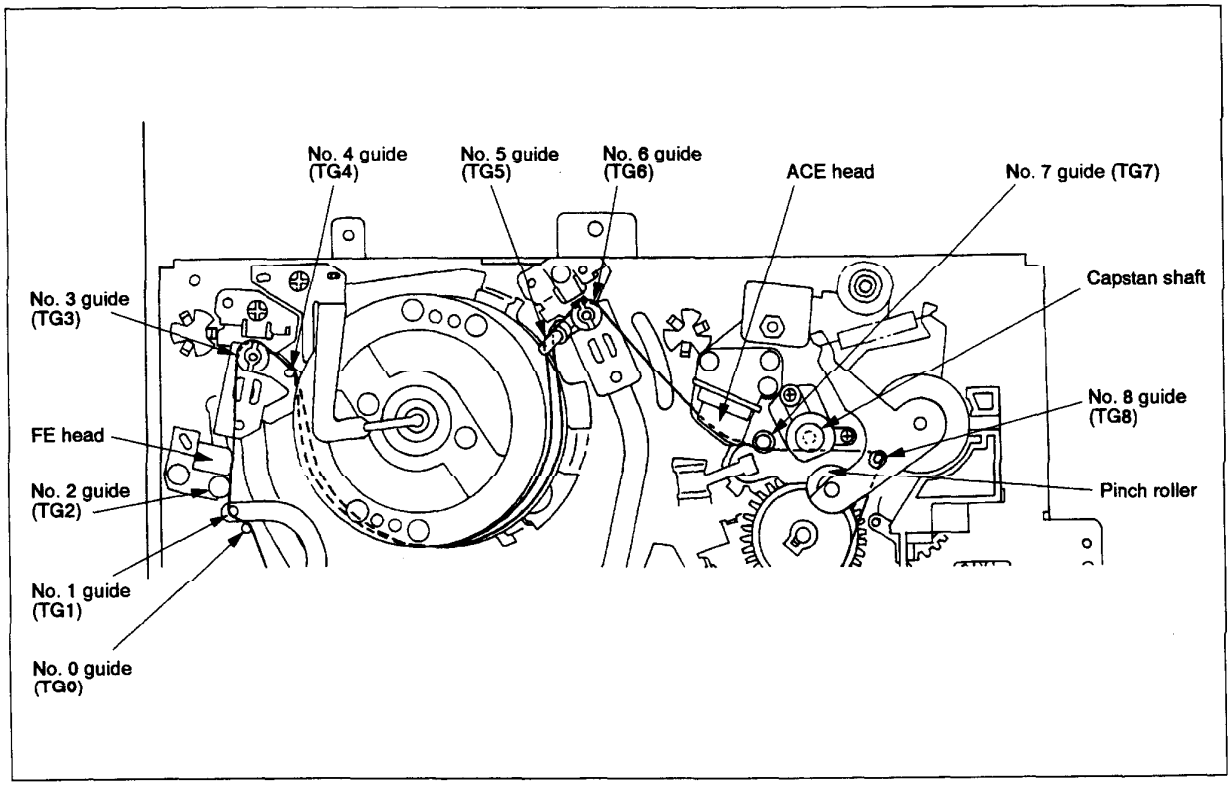
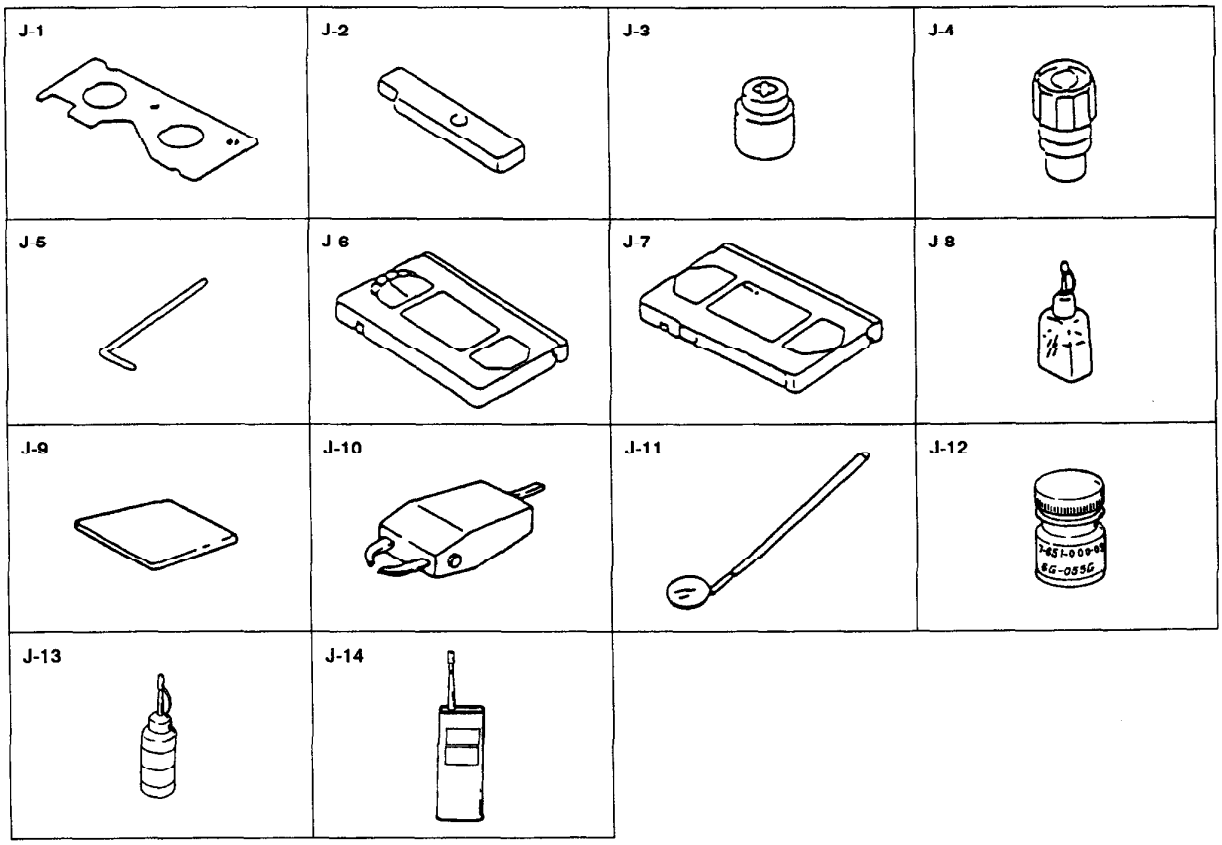


Fig. 2-1 Parts requiring cleaning

2-5. TOOLS AND FIXTURES REQUIRED FOR SERVICING

Ref No.	Name	Part No.	Carved Jig No.	Remarks
J-1	Master Plane	H-7099-279-H		Applicable to S-VHS
J-2	Reel Disk Height Jig	H-7099-038-H		
J-3	Torque Gauge Adaptor	H-7099-035-H		
J-4	0.93 mm Torque Gauge	H-7099-039-H		
J-5	Hex. Wrench	H-7099-202-H		
J-6	Torque Measurement Cassette VHT-063S	J-6082-011-A		For FWD & back tension torque measurement.
	Torque Measurement Cassette VHT-404S	J-6082-012-A		For CUE and review torque measurement.
J-7	Alignment Tape JVC-MH-1 (NTSC) 24HASF-2 (NTSC Hi-Fi) JVC-MH-2 (PAL) JVC-MH-4 (SECAM)	 H-7099-046-H H-7099-153-H H-7099-052-H H-7099-053-H		
J-8	Cleaning Fluid	Y-2031-001-0	———	
J-9	Chamois Leather	2-034-697-00	———	
J-10	Head Demagnetizer	Widely available	———	Demagnetize video heads and audio heads.
J-11	Dental Mirror (With handle) Dental Mirror (Mirror)	J-6080-029-A J-6080-030-1	SL-5052	Tape path and tape traveling adjustments or checks.
J-12	FLOIL SG-055G	7-651-000-09		
J-13	Diamond Oil NT-68	7-661-018-18		
J-14	Screw Lock G (1401B)	7-432-114-11		



3. MAINLY MECHANICAL PARTS REPLACEMENT

Notes:

- Refer to the service manual, "DISASSEMBLY" for removal of the cabinet and boards.
- On mounting, while referring to notes on mounting perform reversely in the removal order.
- When replacing greased parts, grease them in the same way.
- Do not oil, grease or touch with bare hands the surfaces contacts tape of guides and brake shoes.
- Install gears to engage each other.
- Basically, disassembling and assembling should be done in the unthreading-end condition.

3-1. FL BLOCK ASSEMBLY (Fig. 3-1)

1) Remove screws ①.
2) Remove FL block assembly ② in the arrow Ⓐ direction.

Note: Be careful not to damage claws on the bottom and front.

[Note on Mounting]

- First insert claws on the bottom and front not to damage.
- Engage FL slide plate to FL driving gear with slightly sliding FL slide plate. (Fig. A)
- Keep clean top sensor and end sensor luminous plates. (Refer to 1-3.)

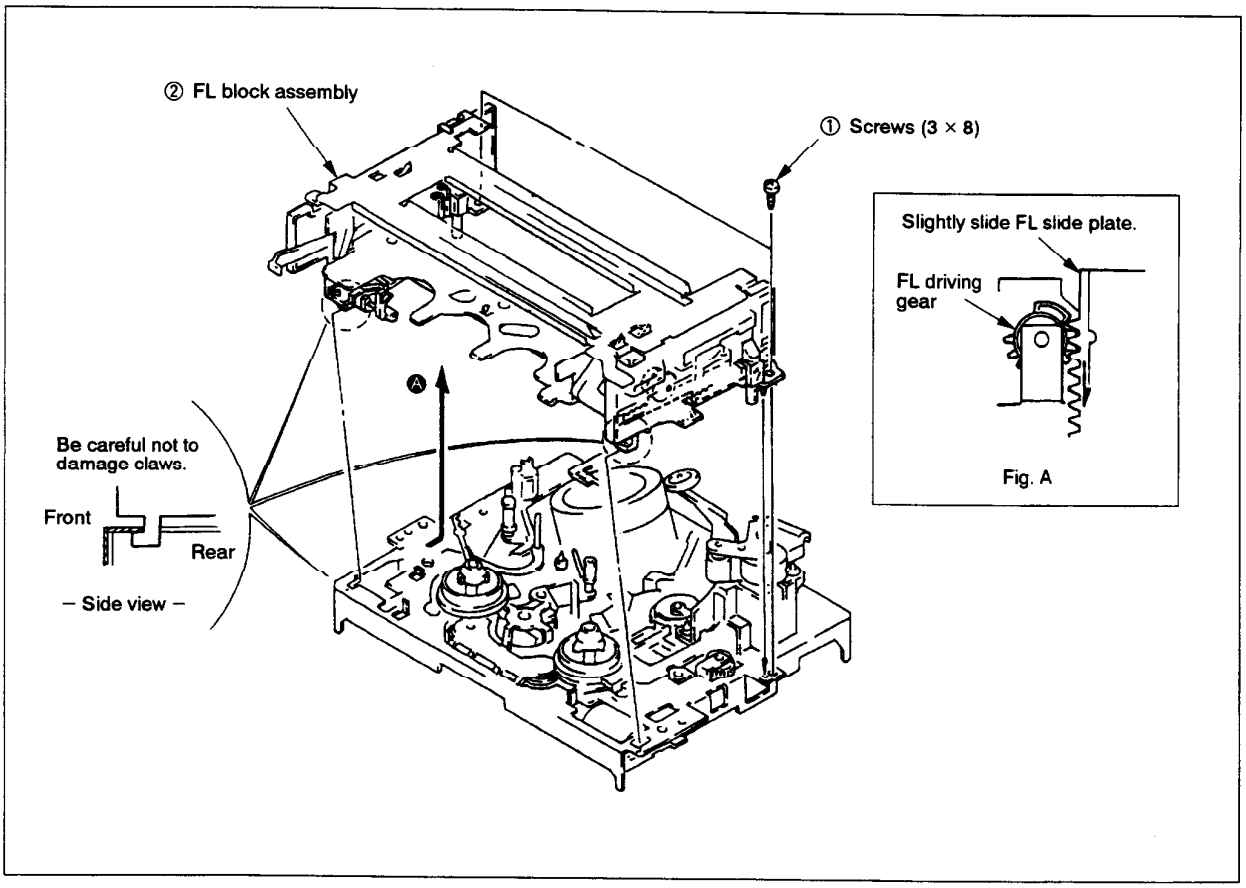


Fig. 3-1

3-2. DRUM ASSEMBLY (Fig. 3-2)

1) Remove screw ①.
2) Remove ground shaft assembly ② not to touch its tip with bare hand or tools.
3) Remove screws ③ to remove drum assembly ④.

[Note on Mounting]

- Don't touch head chips ⑤ and ground shaft assembly ④ with bare hand or tools.
- Keep clean the surface contacts tape of drum assembly ④.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

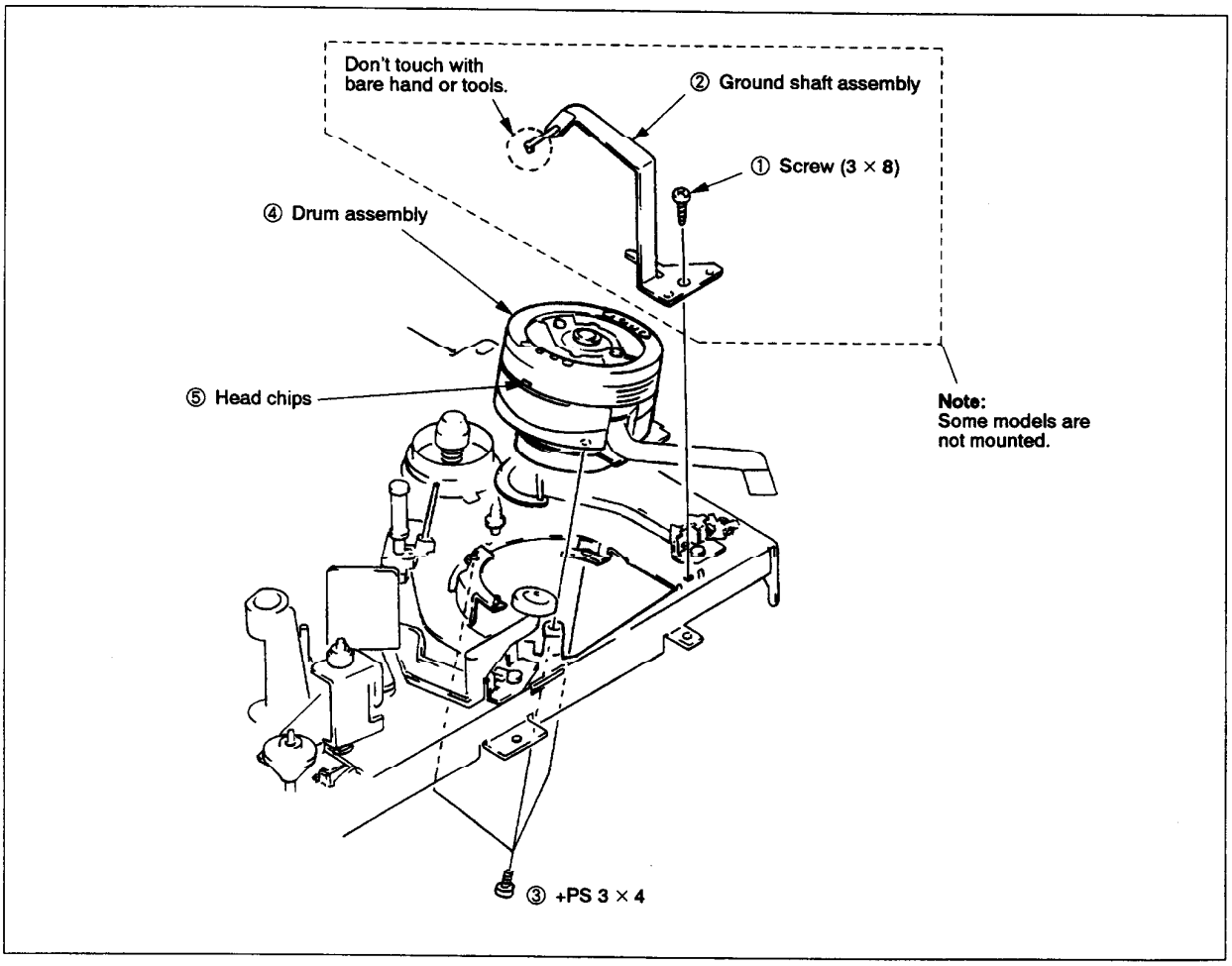


Fig. 3-2

3-3. TIMING BELT (Fig. 3-3)

1) Remove screw ① to remove tension vehicle arm assembly ②.
2) Remove timing belt ③.

[Note on Mounting]

- Tighten screw ① while pressing tension vehicle arm in the arrow Ⓐ direction.

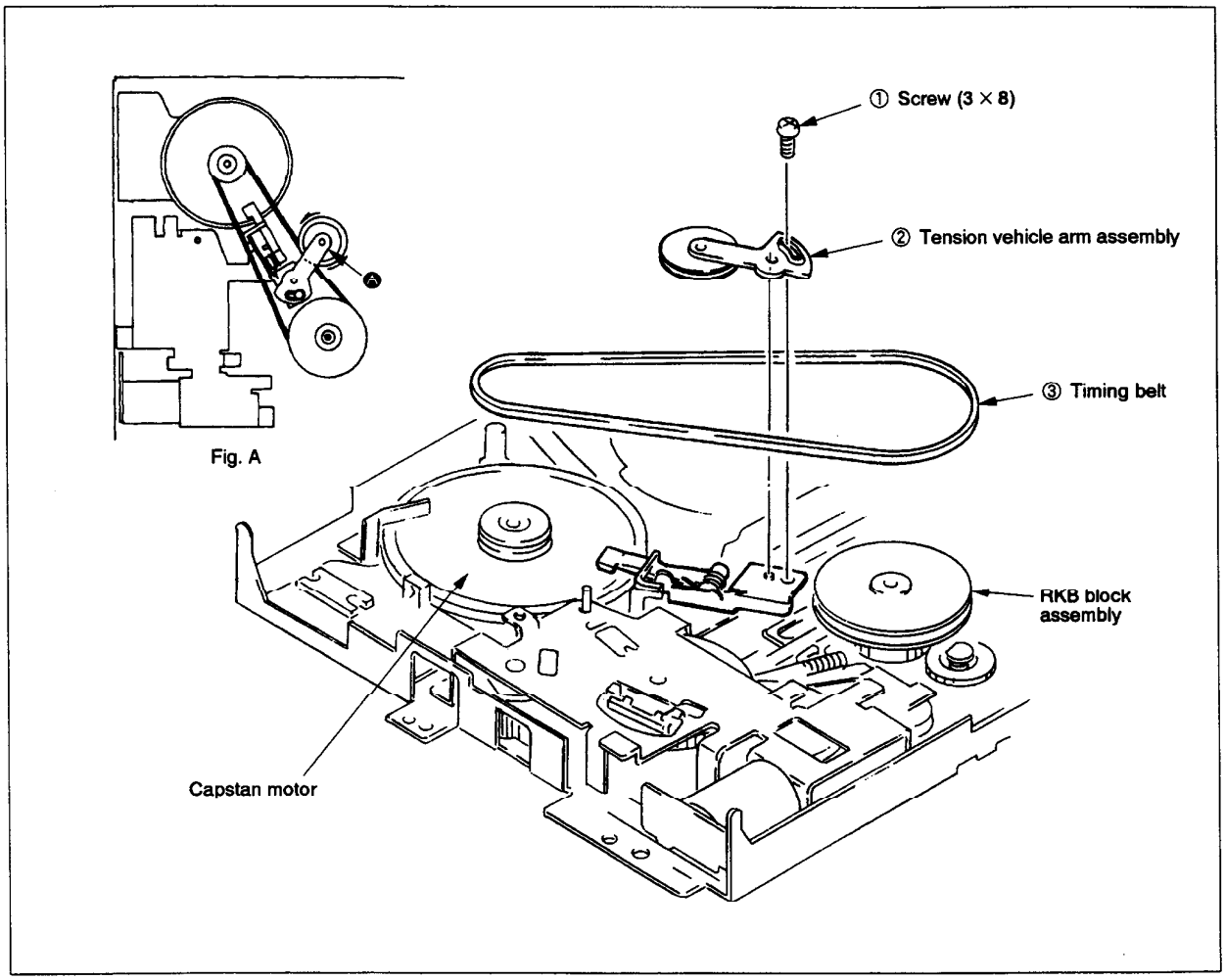


Fig. 3-3

3-4. CAP BRAKE ASSEMBLY (Fig. 3-4)

1) Remove tension vehicle arm assembly. (Refer to 3-3)
2) Remove torsion coil spring ① from portion Ⓐ to remove CAP brake assembly.

[Note on Mounting]

- Mount torsion coil spring ① to CAP brake assembly ② in the order Ⓐ and Ⓑ. (Fig. A)
- Put the fulcrum of CAP brake assembly ② to CAP brake shaft ③ and the tip of torsion coil spring to Ⓒ.
- Don't touch brake shoe Ⓓ with bare hand.

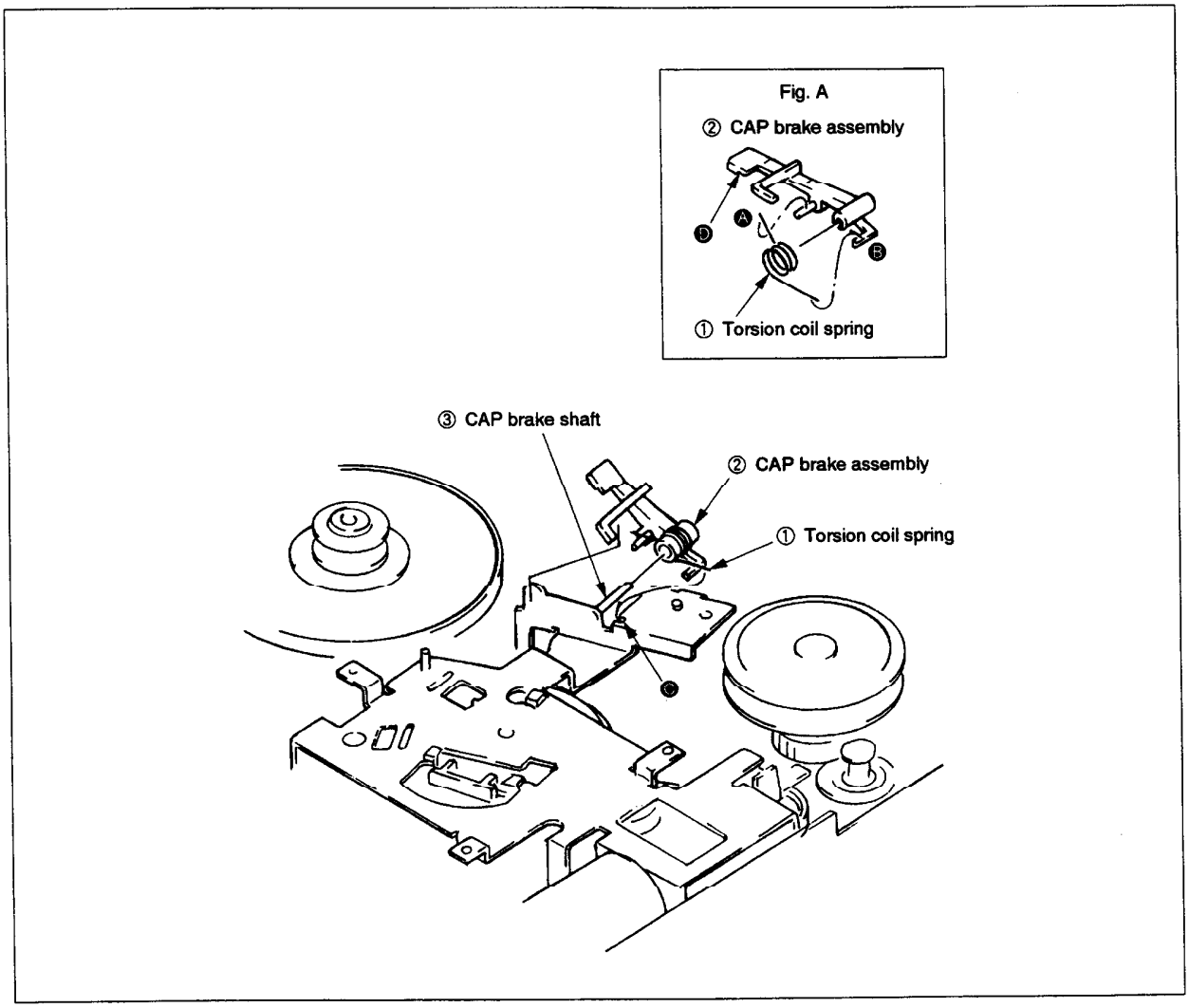


Fig. 3-4

3-5. TG2 ROLLER, FE HEAD ASSEMBLY (Fig. 3-5)

1) Remove claw Ⓐ to pull out TG2 roller ①.
2) Remove screw ② to pull out FE head assembly.

[Note on Mounting]

- Keep clean the surface contacts tape of TG2 roller ①.

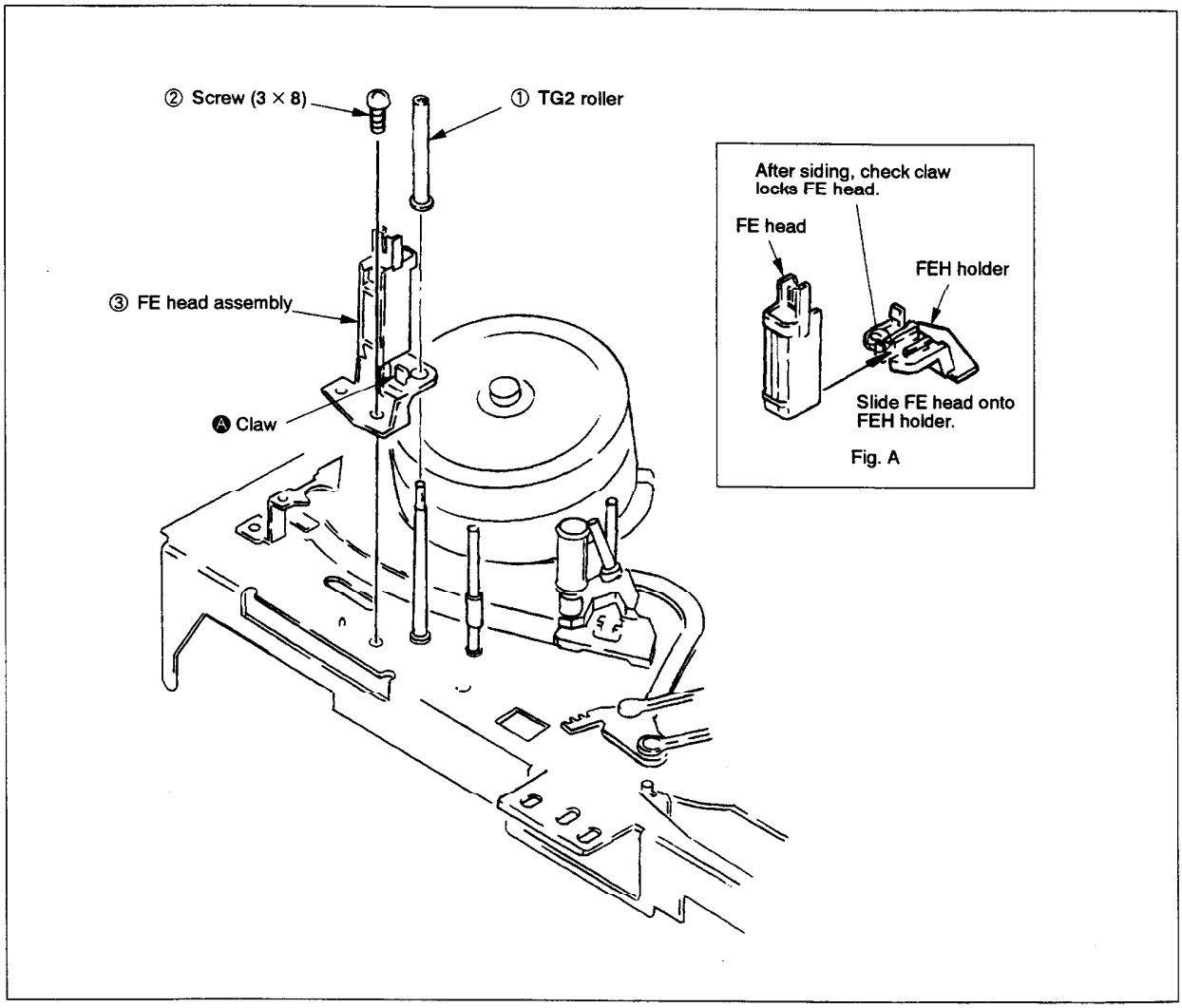


Fig. 3-5

3-6. PINCH PRESS BLOCK ASSEMBLY, ELEVATOR GEAR (Fig. 3-6)

1) Remove E ring ① to pull out pinch press block assembly ②.
2) Remove lid opener ③ by pressing claw Ⓐ in the arrow Ⓑ direction.
3) Pull out elevator gear ④.

[Note on Mounting]

- Apply grease FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portions.
- Be sure to match the phase Ⓒ between elevator gear ④ and press gear ⑤ on mounting elevator gear ④.

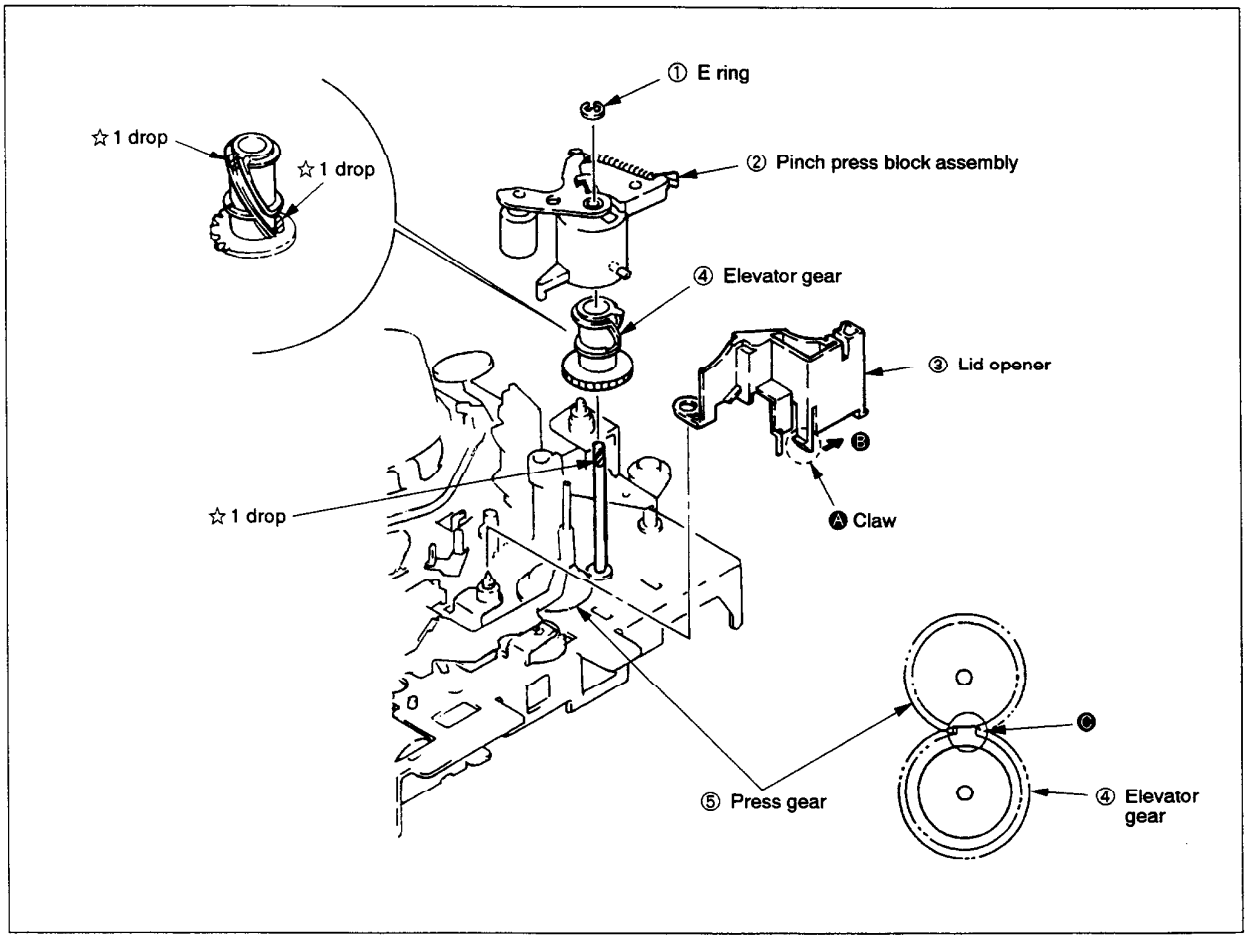


Fig. 3-6

3-7. ACE BLOCK ASSEMBLY (Fig. 3-7)

1) Move torsion coil spring (ACE) ① in the arrow Ⓐ direction.
2) Remove ACE adjustment screw ②.
3) Remove AC height adjustment nut ③ to pull out ACE block assembly ④.

[Note on Mounting]

- Keep clean the surface contacts tape of ACE block assembly ④.
- Be sure to hang torsion coil spring (ACE) ① in the arrow Ⓑ direction.
- Set ACE adjustment screw ② to the height as shown in Fig. A.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.
- After adjustment apply Screw Lock G (1401B) (Jig Ref. No. J-14) at ☆ marked portion.

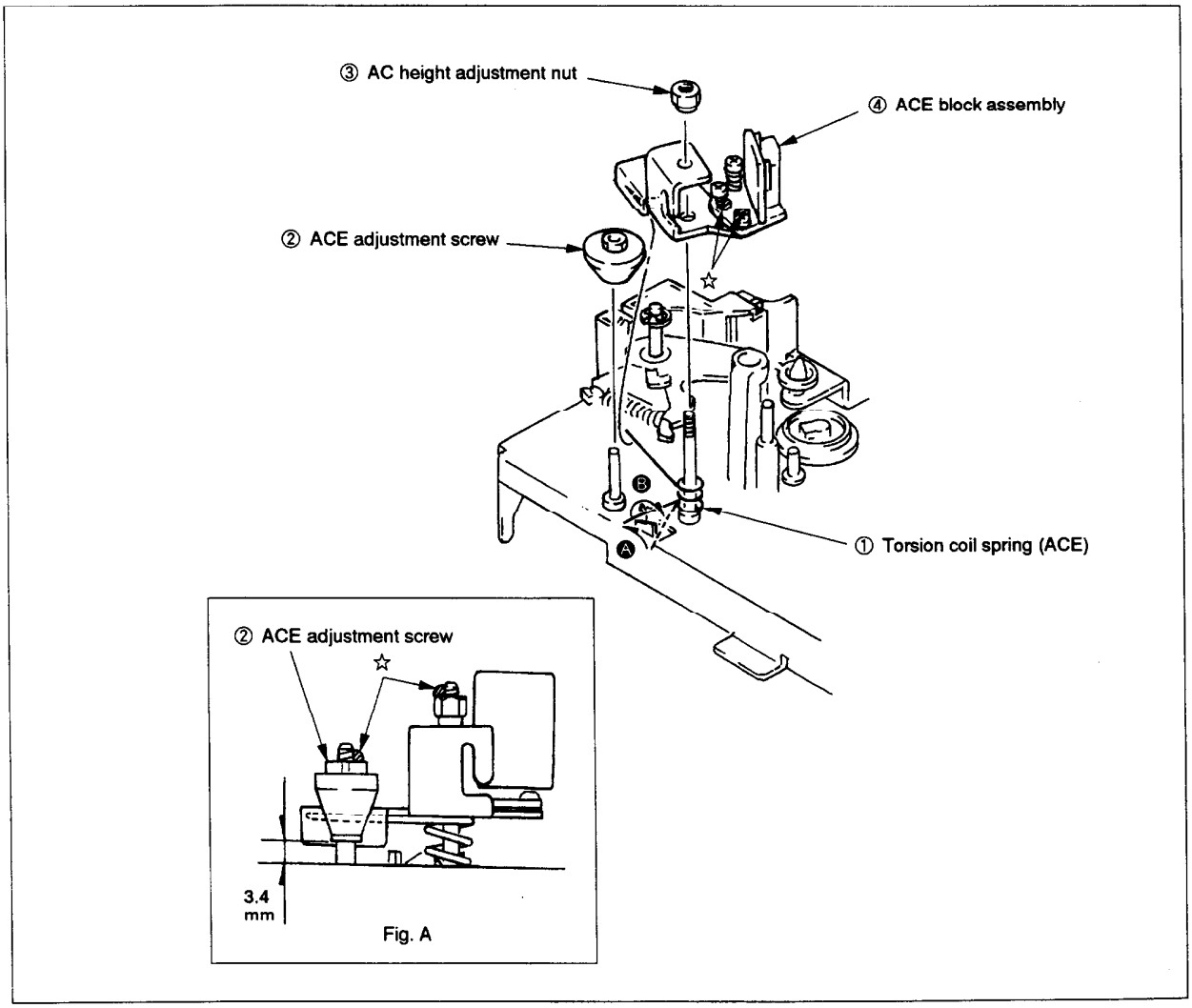


Fig. 3-7

3-8. TG3, TG6 GUIDE ROLLER ASSEMBLIES (Fig. 3-8)

1) Loosen screw ① and pull out. TG3 guide roller assembly ② by turning it in the arrow Ⓐ direction.
2) Loosen screw ③ and pull out TG6 guide roller assembly ④ by turning it in the arrow Ⓑ direction.

[Note on Mounting]

- Keep clean the surface contacts tape of TG3 and TG6 guide roller assemblies ②, ④.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

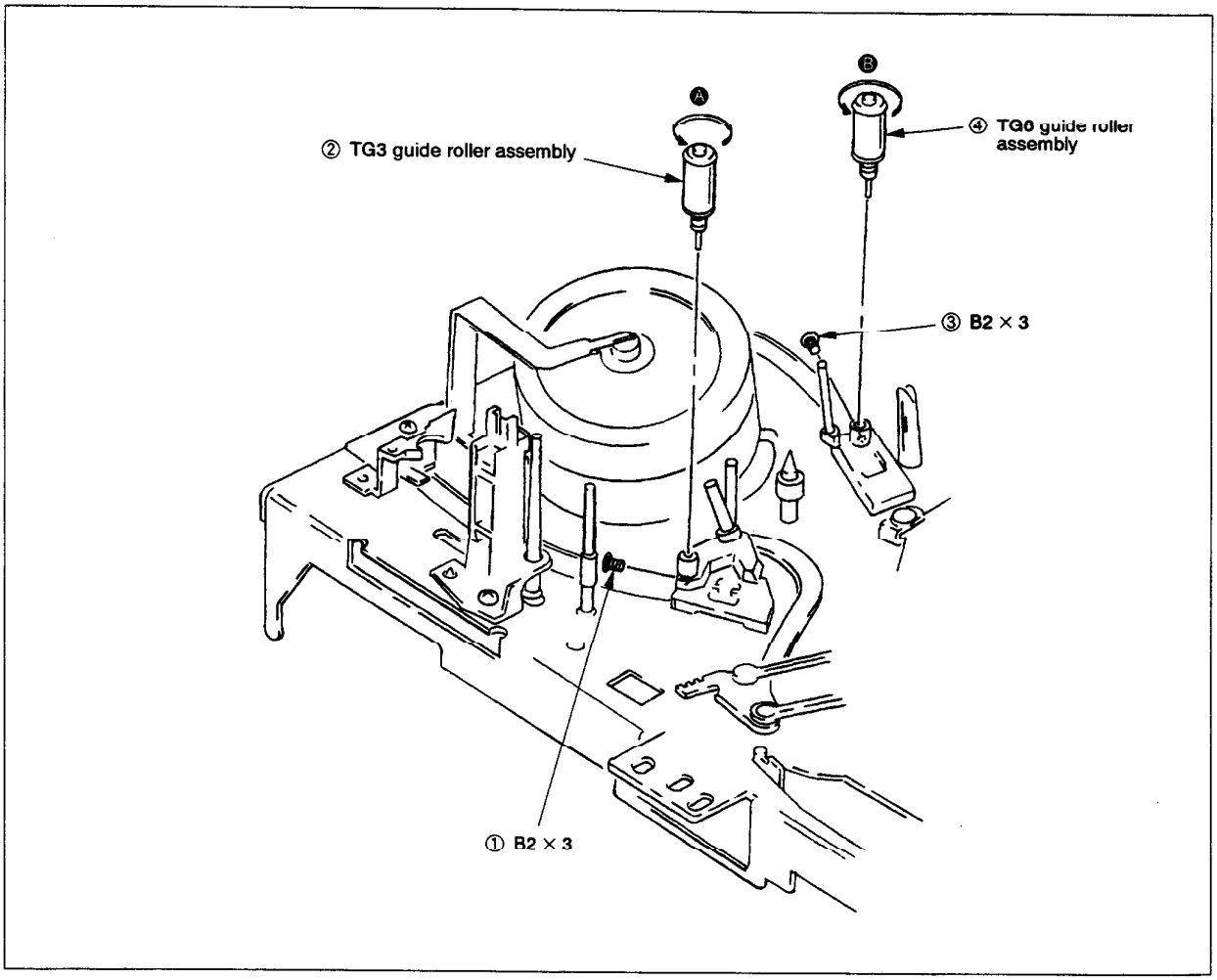


Fig. 3-8

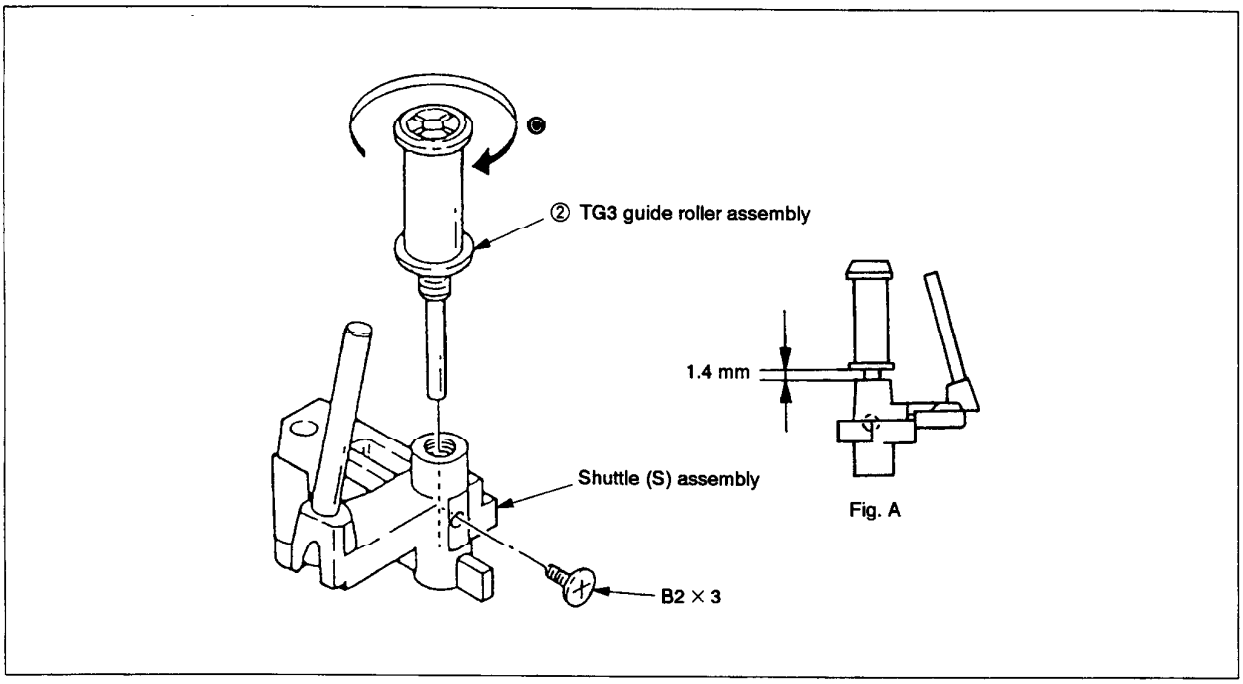


Fig. 3-9

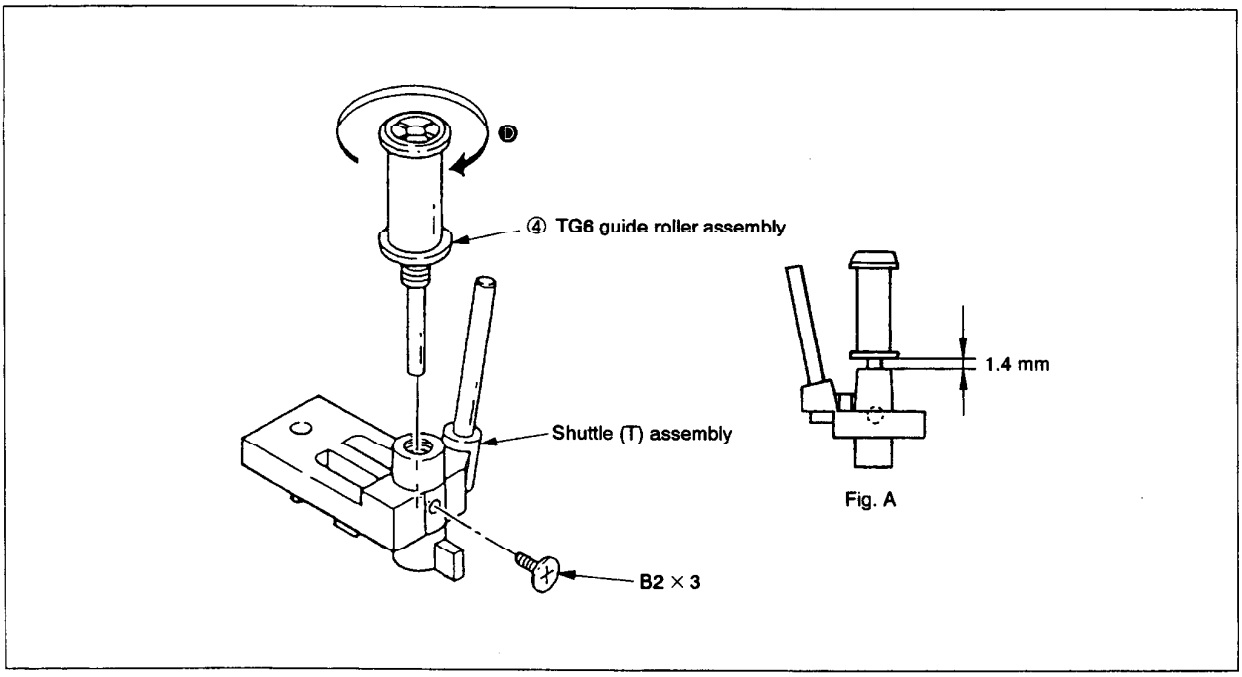


Fig. 3-10

3-9. CAPSTAN MOTOR (Fig. 3-11)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove screws ① to pull out capstan motor ②.

[Note on Mounting]

- Keep clean the surface contacts tape of capstan motor ②.
- On tightening screws ①, first tighten screw A temporarily, next tighten screws in the order B to C to A.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

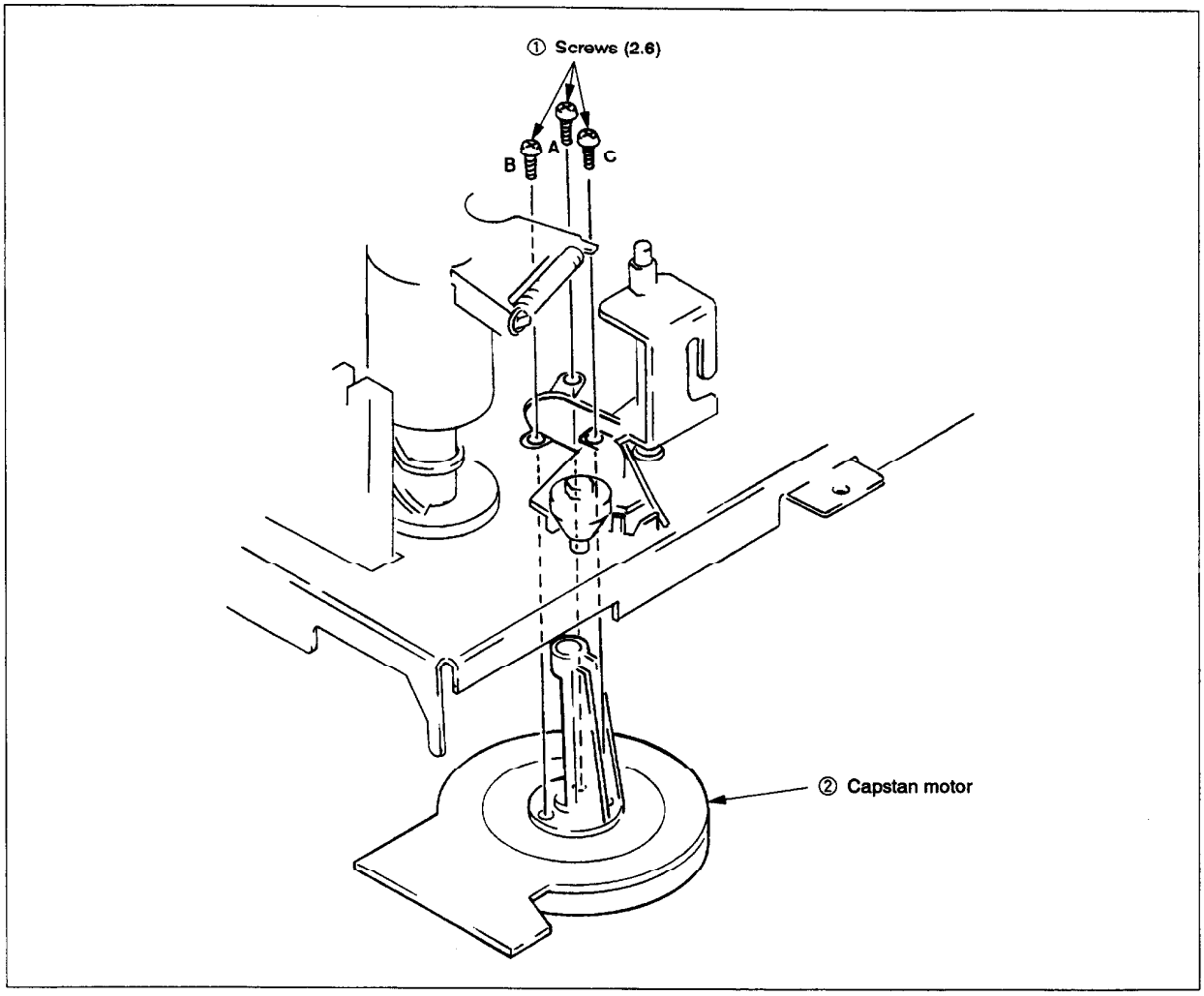


Fig. 3-11

3-10. MAIN BRAKE ASSEMBLIES S AND T (Fig. 3-12)

1) Remove tension spring ①.
2) Remove stopper washer (2) ② to remove neutrality arm ③.
3) Remove pendulum compulsion arm ④ and tension coil spring ⑤.
4) Remove stopper washer (2) ⑥ to remove main brake S assembly ⑦.
5) Remove stopper washer (2) ⑧ to remove main brake T assembly ⑨.

[Note on Mounting]

- Don't touch brake shoes Ⓐ and Ⓑ with bare hand.
- Apply FLOIL FG-055G (Jig Ref. No. J-12) to ☆ marked portions.

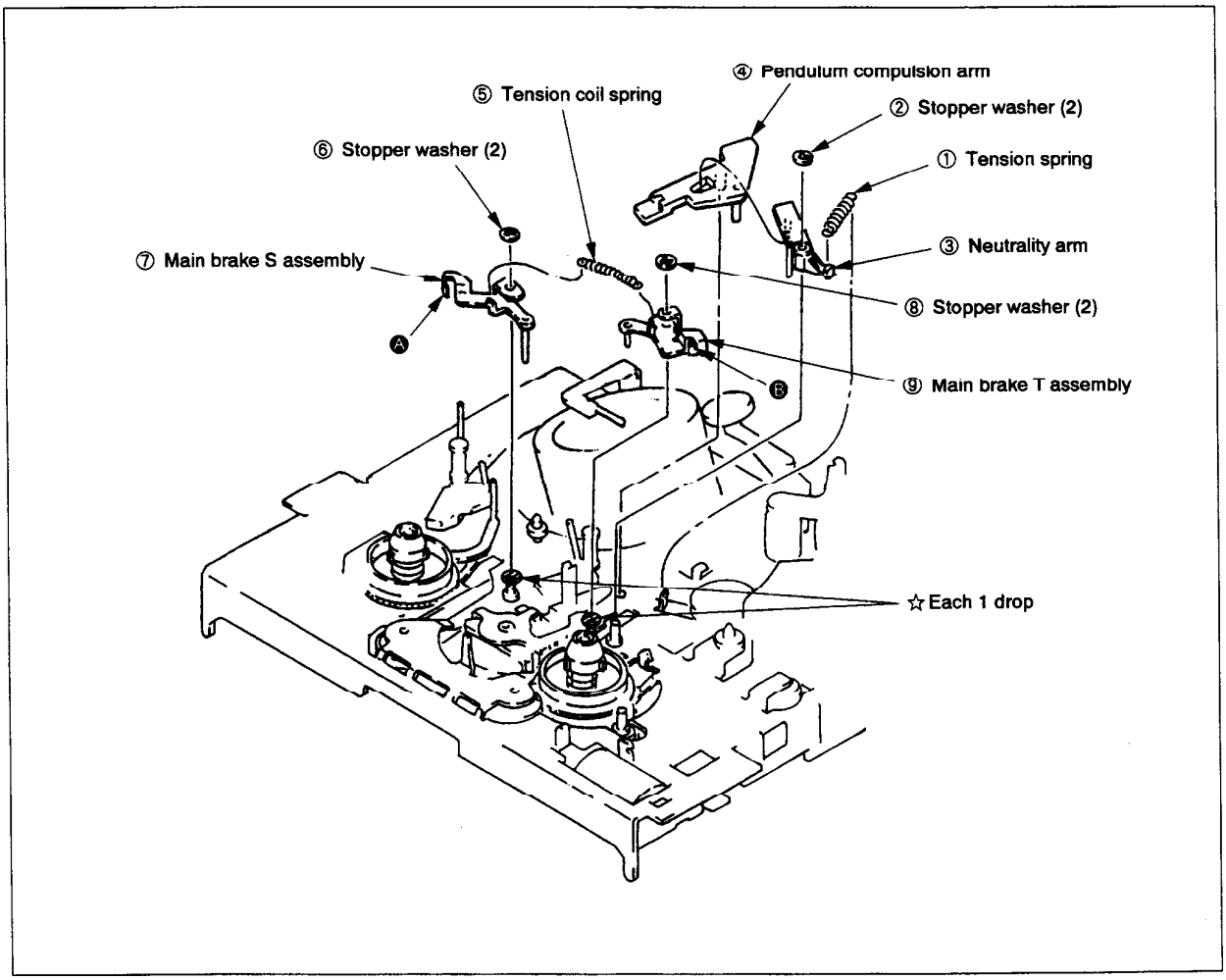


Fig. 3-12

3-11. SOFT BRAKE T ASSEMBLY (Fig. 3-13)

1) Remove pinch press block assembly. (Refer to 3-6.)
2) Remove lid opener ① carefully not to damage claw Ⓐ.
3) Remove tension spring ② from side Ⓑ to pull out soft brake T assembly ③.

[Note on Mounting]

- Don't touch brake shoes Ⓒ with bare hand.

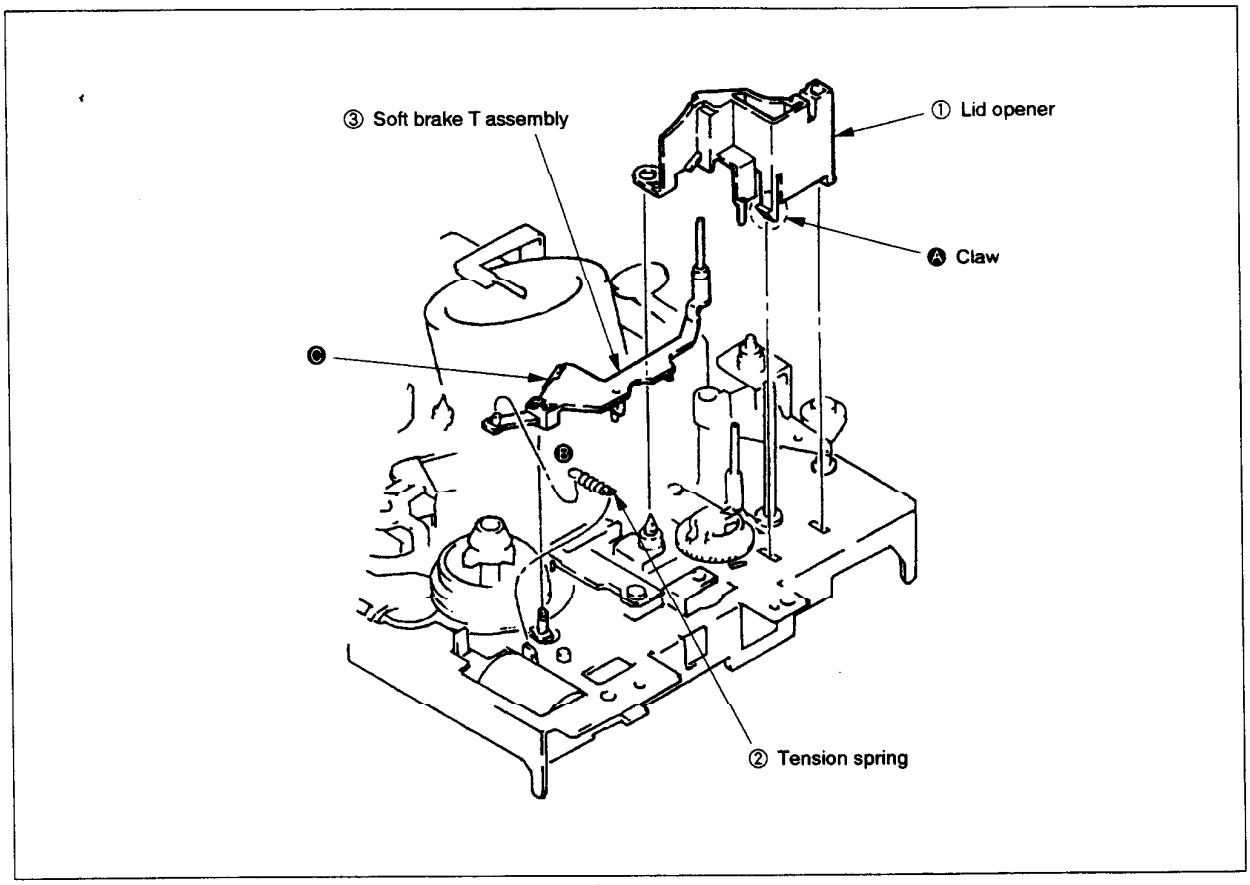


Fig. 3-13

3-12. RVS BRAKE ARM ASSEMBLY, REEL TABLE (T) ASSEMBLY (Fig. 3-14)

1) Remove main brake T assembly. (Refer to 3-10.)
2) Remove soft brake T assembly. (Refer to 3-11.)
3) Remove tension coil spring ① in the order Ⓐ to Ⓑ.
4) Remove RVS brake arm assembly ②.
5) Remove stopper washer (2) ③ to pull out reel table (T) assembly ④.

[Note on Mounting]

- Apply one drop of Diamond Oil NT-68 (Jig Ref. No. J-13) to ☆ marked portion before mounting reel table (T) assembly ④. (Fig. A)
- Don't touch the hatched portion on reel table (T) assembly ④ and brake shoe Ⓒ of RVS brake arm assembly ② with bare hand.

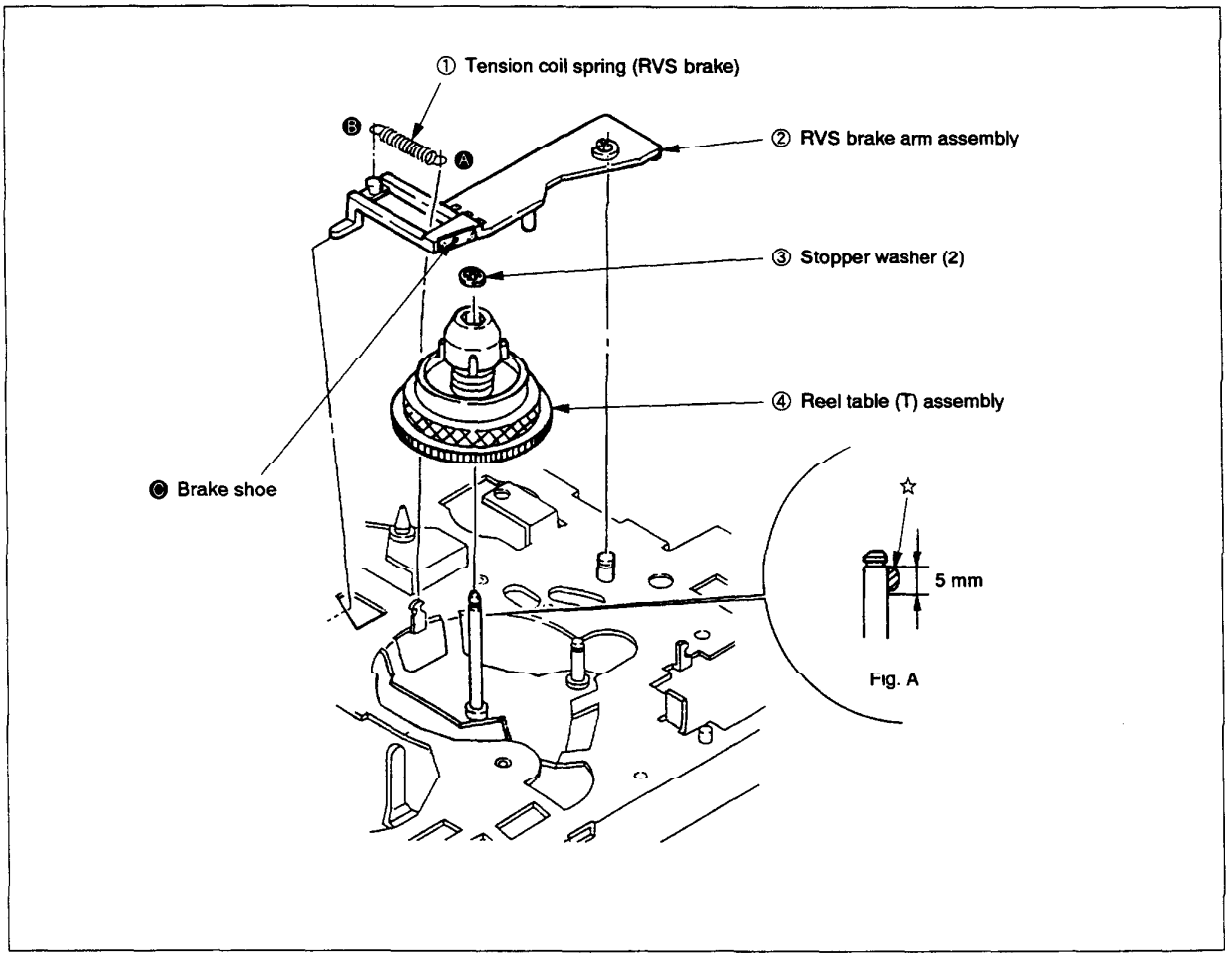


Fig. 3-14

3-13. TG8 ASSEMBLY (Fig. 3-15)

1) Remove TG8 retainer ① to pull out TG8 assembly ②.

[Note on Mounting]

- Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portion.
- Keep clean the surface contacts tape of TG8 assembly ②.
- Be careful not to change the shape of TG8 retainer ①.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

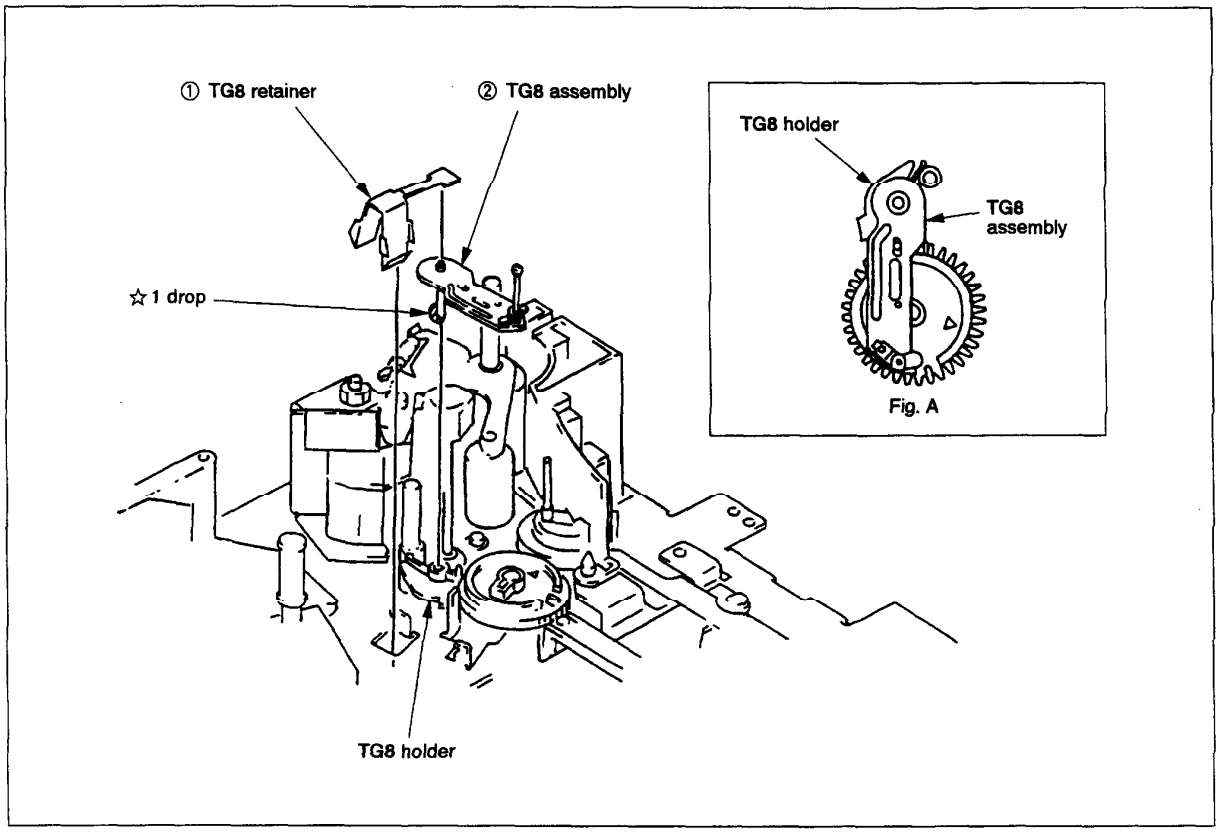


Fig. 3-15

3-14. TG8 HOLDER (Fig. 3-16)

1) Remove TG8 assembly. (Refer to 3-13)
2) Pull out TG8 holder ①.

[Note on Mounting]

• Be careful about the direction of TG8 holder ①. (Ⓐ of Fig. A)

[Adjustment after Mounting]

• 4-1. Tape path adjustment.

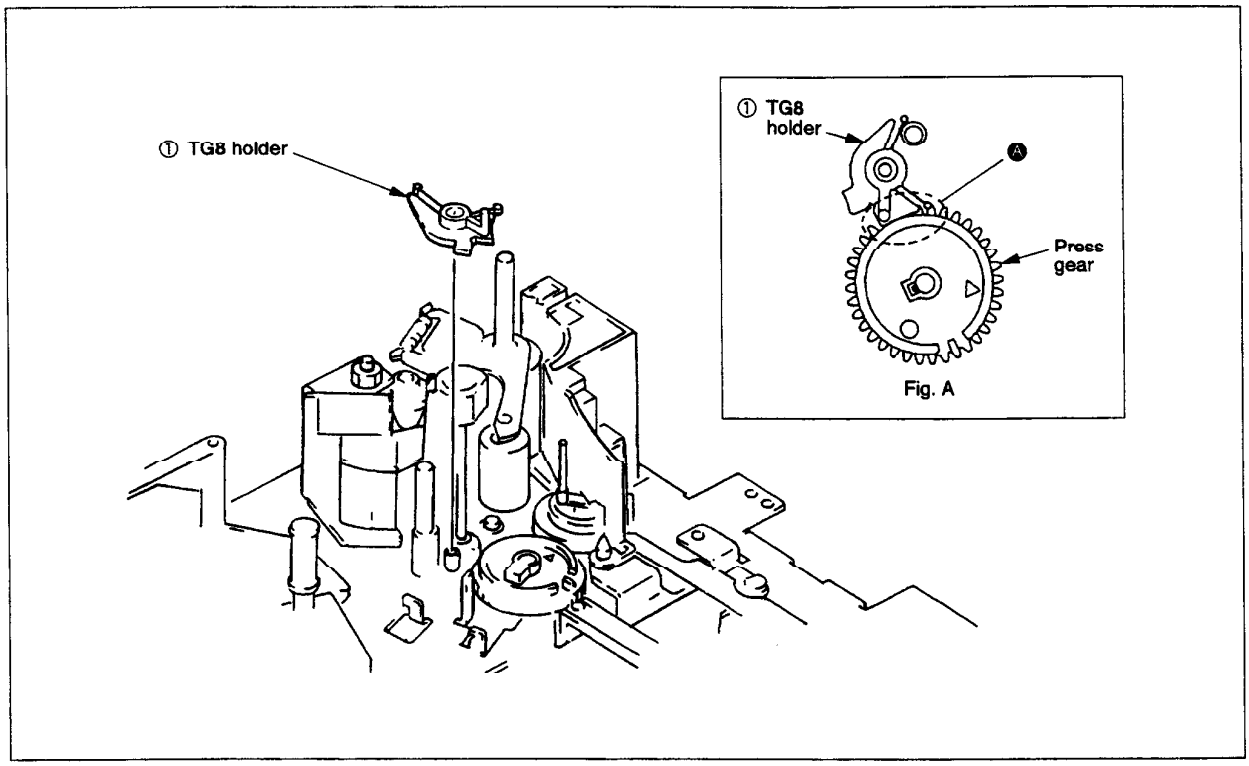


Fig. 3-16

3-15. TG8 AND PRESS GEARS (Fig. 3-17)

1) Remove pinch press block assembly. (Refer to 3-6.)
2) Remove soft brake T assembly. (Refer to 3-11.)
3) Remove TG8 assembly. (Refer to 3-13.)
4) Remove TG8 holder. (Refer to 3-14.)
5) Pull out TG8 gear ① or press gear ②.

[Note on Mounting]

- Adjust the holes on gears to the holes on chassis. (Fig. A)
- Adjust the arrows carved on gears each other. (Fig. A)

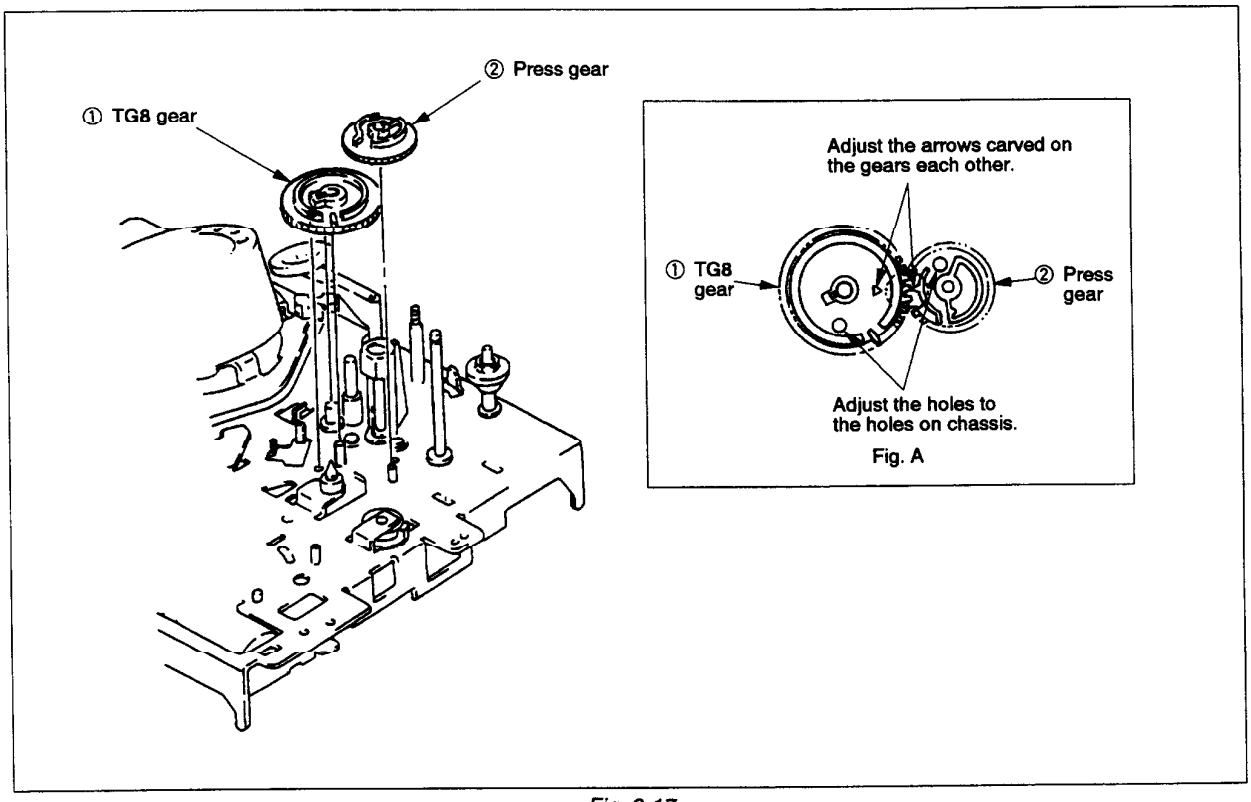


Fig. 3-17

3-16. CAM MOTOR CHASSIS BLOCK ASSEMBLY, UPPER/LOWER COMMUNICATION GEAR (Fig. 3-18)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove screws ① to remove cam motor chassis assembly ②.
4) Pull out upper/lower communication gear ③.

[Note on Mounting]

- First, check main slider ④ slides fully in the arrow Ⓔ direction.
- Set rotary encoder switch position to "E" seen from the window of cam motor chassis. (Fig. A)
- Tighten screws ① in the order Ⓐ to Ⓑ to Ⓒ to Ⓓ.

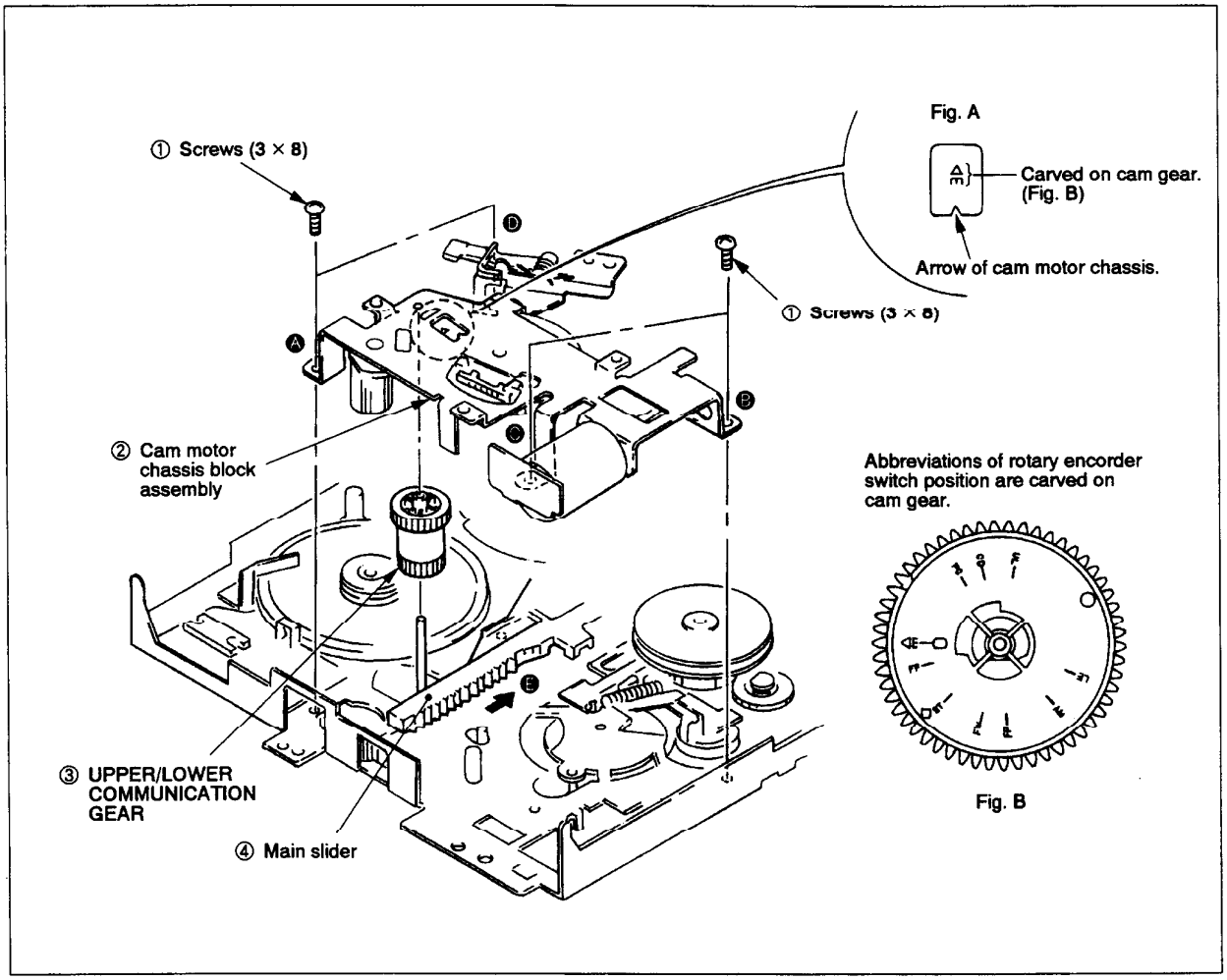


Fig. 3-18

3-17. ROTARY ENCODER SWITCH (Fig. 3-19)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly (Refer to 3-15.) and turn upside on the bottom.
4) Remove stopper washer (2) ① to pull out worm wheel ②.
5) Remove stopper washer (2) ③ to pull out cam gear ④.
6) Pull out FL driving gear ⑤ and rotary encoder switch ⑥.

[Note on Mounting]

- Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portions. (Fig. 3-19, A)
- Adjust the hole Ⓐ to the hole on cam motor chassis. (Fig. B)
- Adjust the holes Ⓑ and Ⓒ to the hole on cam motor chassis. (Fig. C)

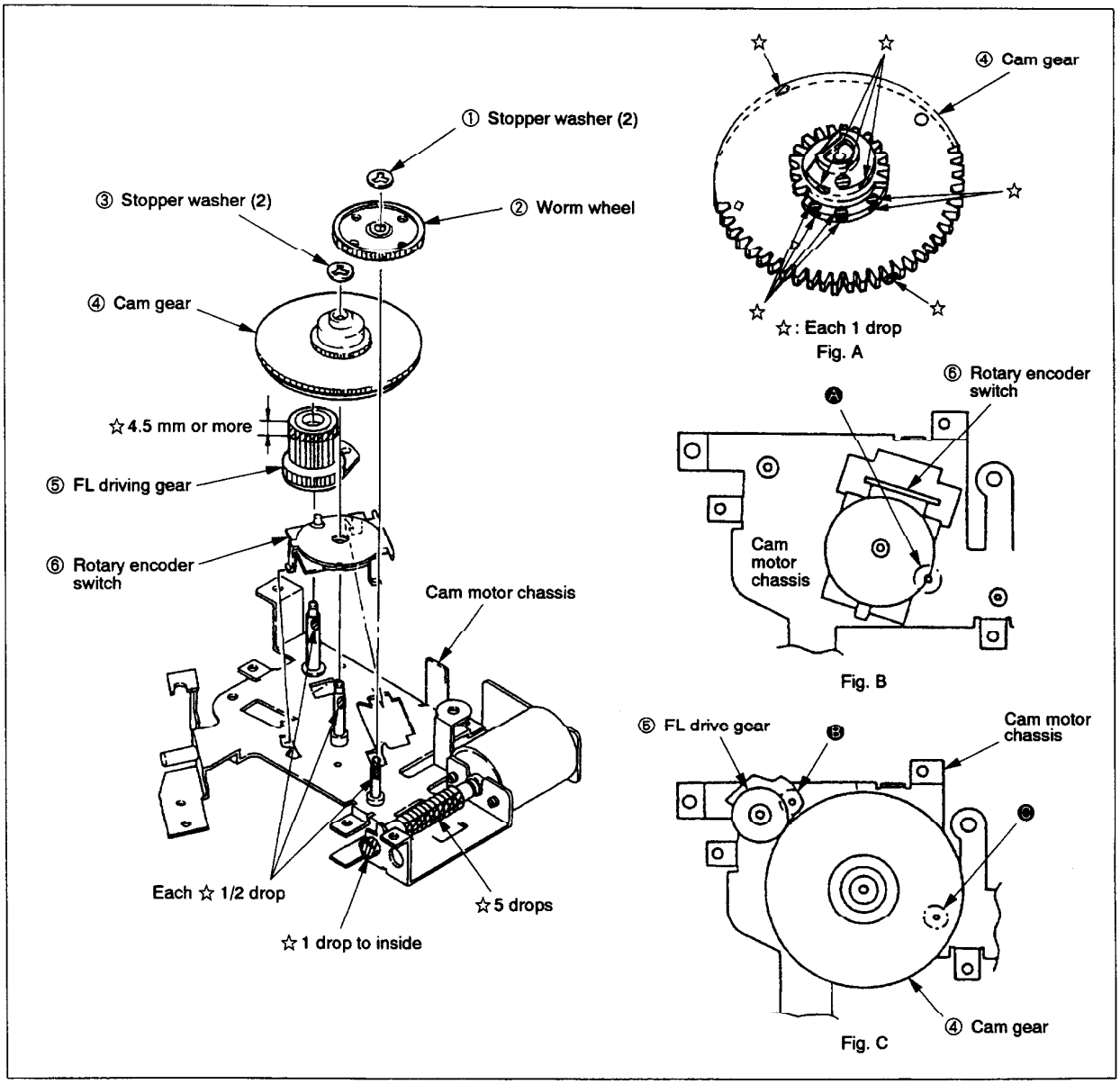


Fig. 3-19

3-18. MAIN SLIDER (Fig. 3-20)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove screw ① to remove retainer ②.
5) Pull out main slider ③.

[Note on Mounting]

- Apply FLOIL SG-055G (Jig Ref. No. J-12) as shown in Fig. A.
- At the last, slide main slider fully in the arrow Ⓐ direction.

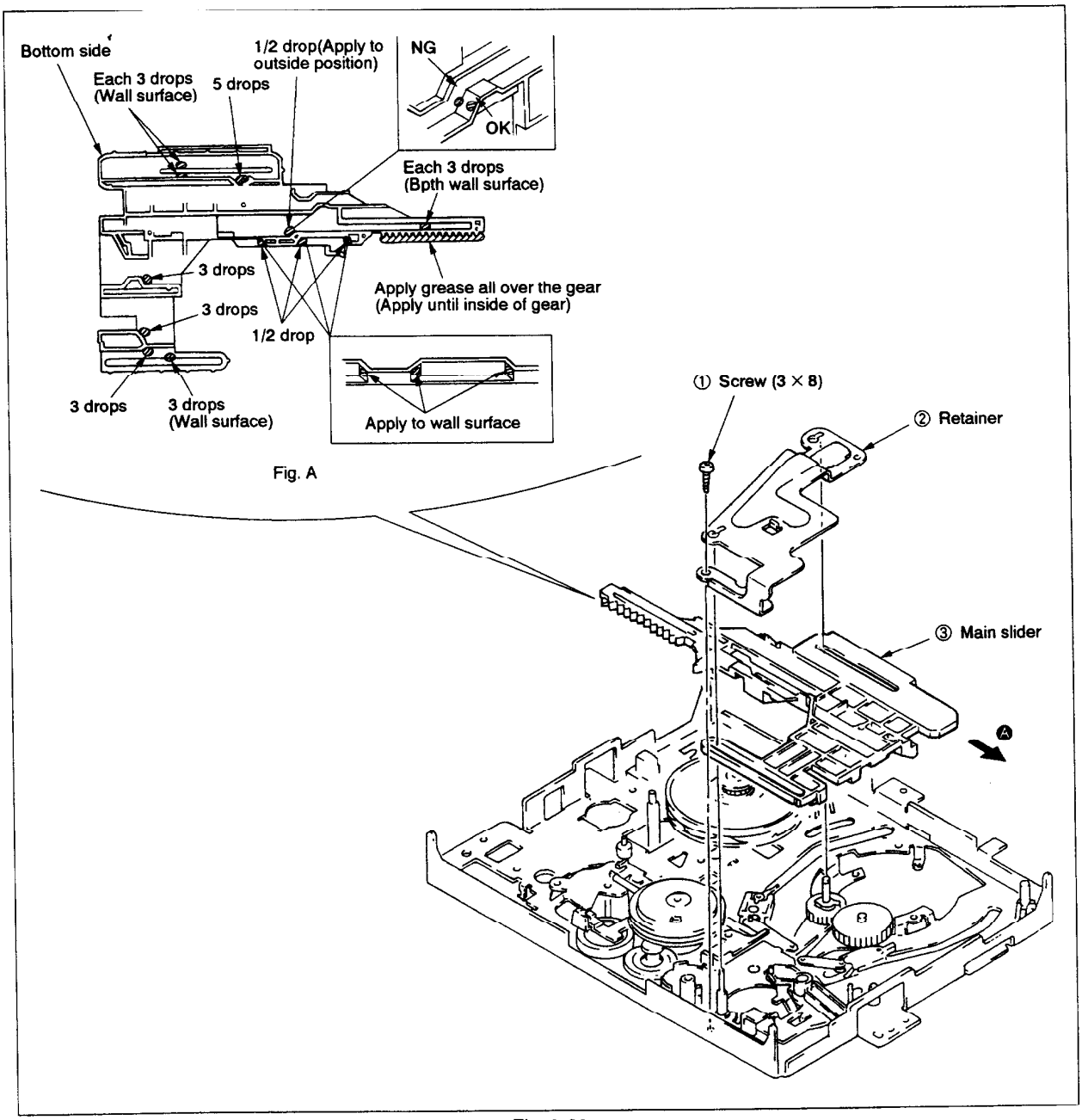


Fig. 3-20

3-19. SHUTTLE T BLOCK AND LOADING GEAR T BLOCK ASSEMBLIES (Fig. 3-21)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove main slider. (Refer to 3-18.)
5) Remove screw ① to remove loading leaf (T) spring ② and shuttle T block assembly ③.
6) Pull out loading gear T block assembly ④.

[Note on Mounting]

- Adjust the phase Ⓐ between loading gear (T) and loading gear (S). (Fig. A)
- Keep clean the surface contacts tape of shuttle T block assembly ③.

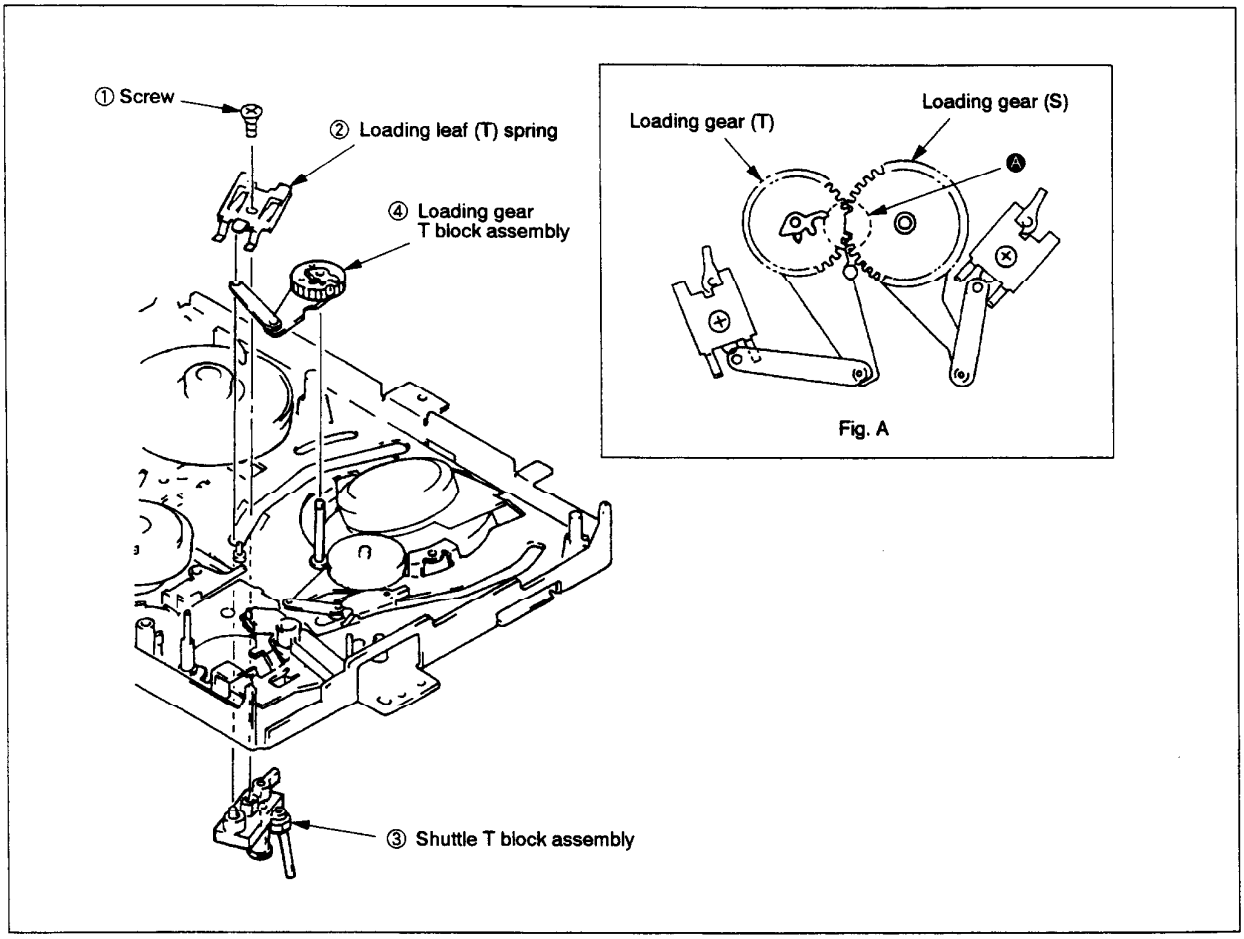


Fig. 3-21

3-20. SHUTTLE S BLOCK AND LOADING GEAR S BLOCK ASSEMBLIES (Fig. 3-22)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove main slider. (Refer to 3-15.)
5) Remove screw ① to remove loading leaf (S) spring ② and shuttle S block assembly ③.
6) Pull out loading gear S block assembly ④.

[Note on Mounting]

- Adjust the phase Ⓐ between loading gear (S) and loading gear (S). (Fig. A)
- Keep clean the surface contacts tape of shuttle S block assembly ③.

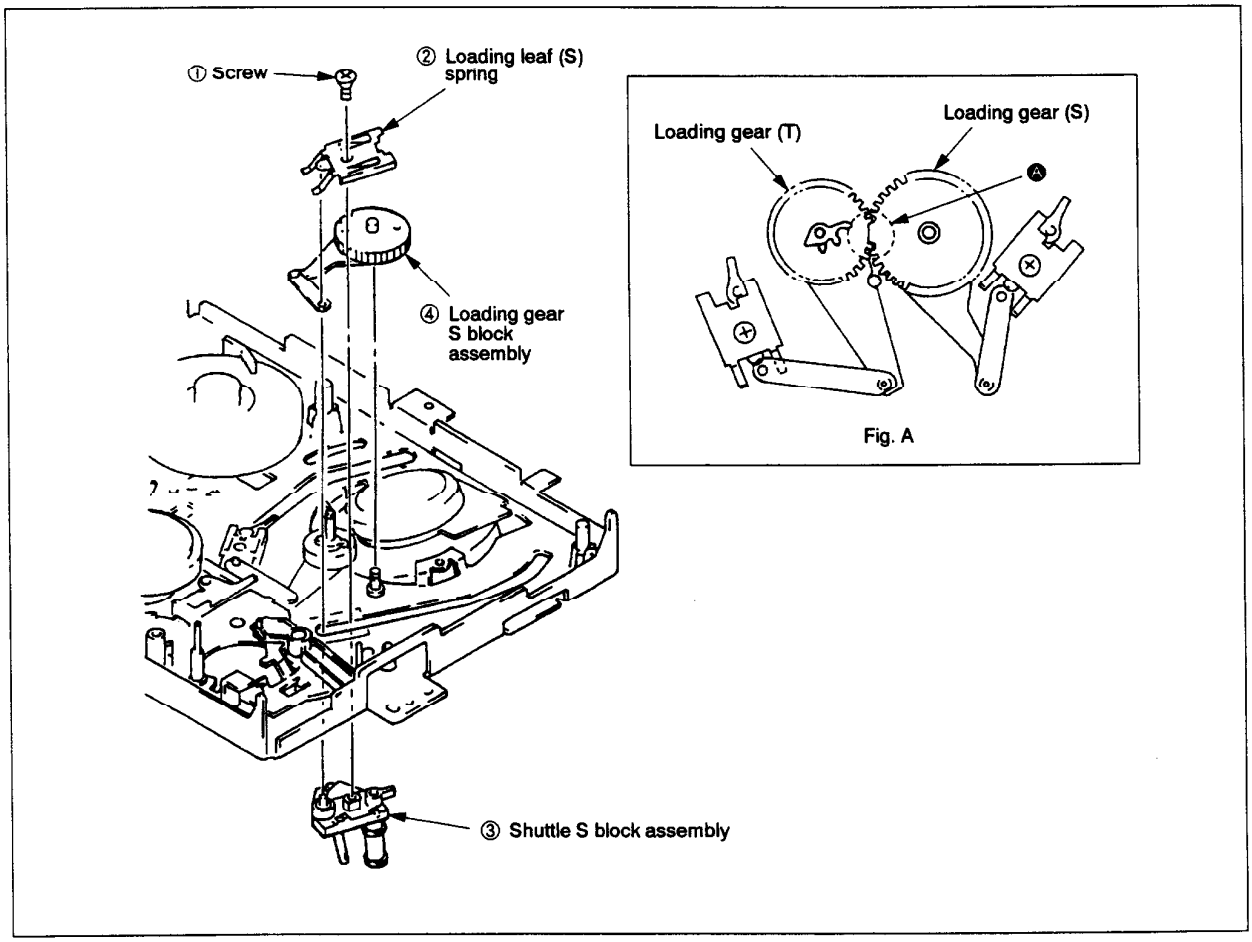


Fig. 3-22

3-21. REEL TABLE (S) ASSEMBLY (Fig. 3-23)

1) Remove tension spring ① from the chassis side.
2) Remove stopper washer (2) ② to pull out soft brake (S) ③.
3) Move TG1 band ④ over the reel table.
4) Remove stopper washer (2) ⑤.
5) While pressing main brake S assembly ⑥, pull out reel table (S) assembly ⑦.

[Note on Mounting]

- Apply one drop of Diamond Oil NT-68 (Jig Ref. No. J-13) to ☆ marked portion before mounting reel table (S) assembly ⑥. (Fig. A)
- Don't touch the hatched portion on reel table (S) assembly ⑥ with bare hand.

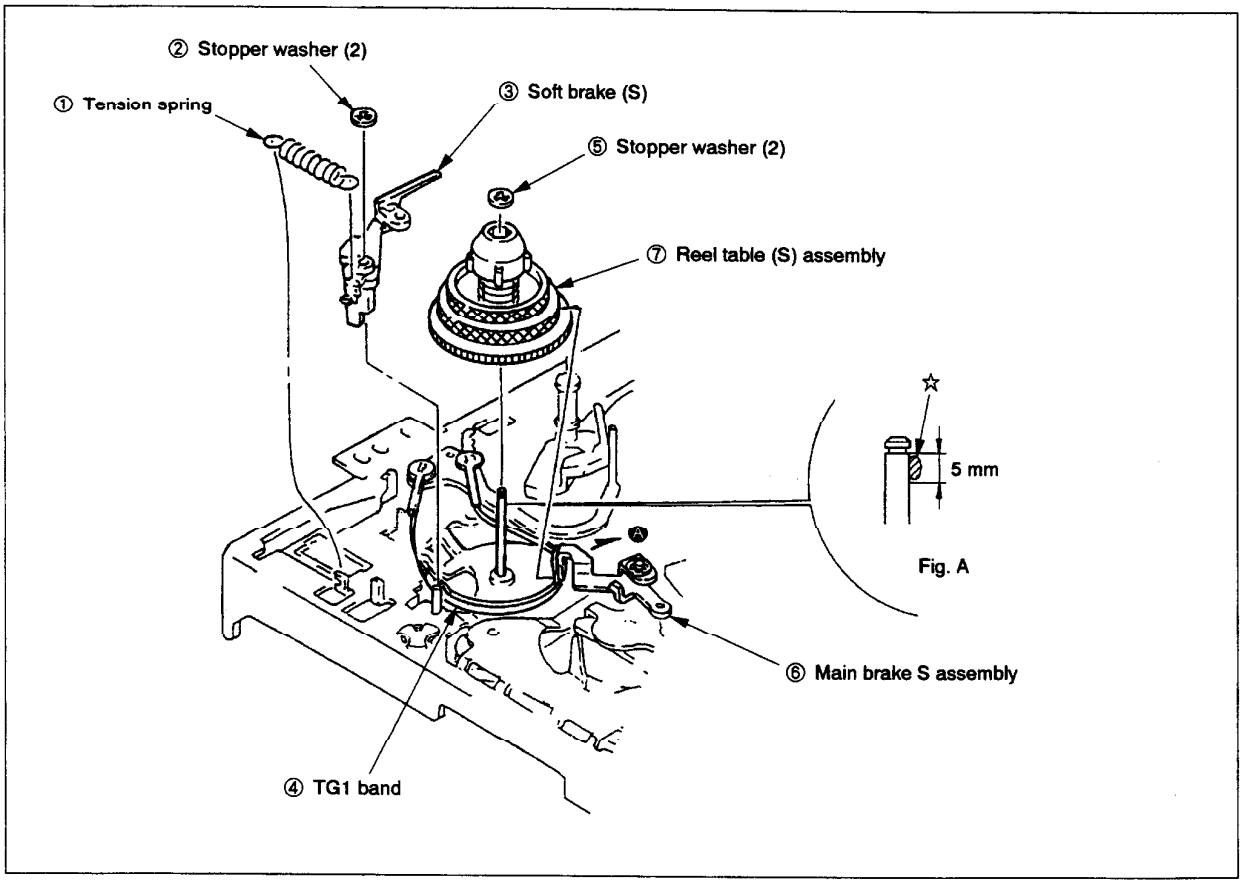


Fig. 3-23

3-22. TG1 ASSEMBLY (Fig. 3-24)

1) Set the mechanism to the loading-end condition referring to 1-1. (Cam gear indicates "LE". (Refer to Fig. A and B of Fig. 3-18.))
2) Remove tension spring ① in the order Ⓐ to Ⓑ.
3) Remove stopper washer (2) ② to pull out TG1 assembly ③.

[Note on Mounting]

- Apply one drop of Diamond Oil NT-68 (Jig Ref. No. J-13) to ☆ marked portion.
- Keep clean the felt side of TG1 assembly.

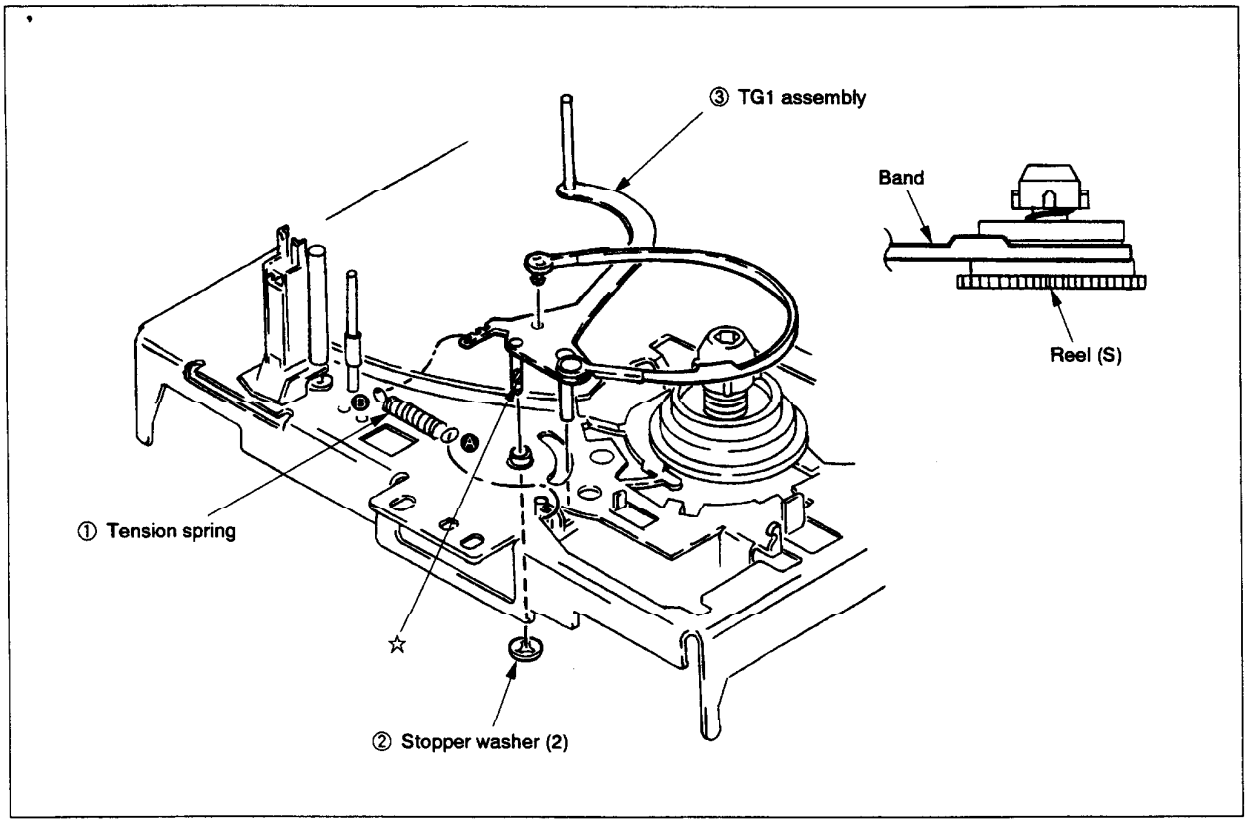


Fig. 3-24

3-23. S WINDING BLOCK ASSEMBLY (Fig. 3-25)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove main slider. (Refer to 3-18.)
5) Remove stopper washer (2) ① to pull out S winding block assembly ②.
6) Remove torsion spring ③.

[Note on Mounting]

- At the last, hang torsion spring ② to the position Ⓐ.
- Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portions.

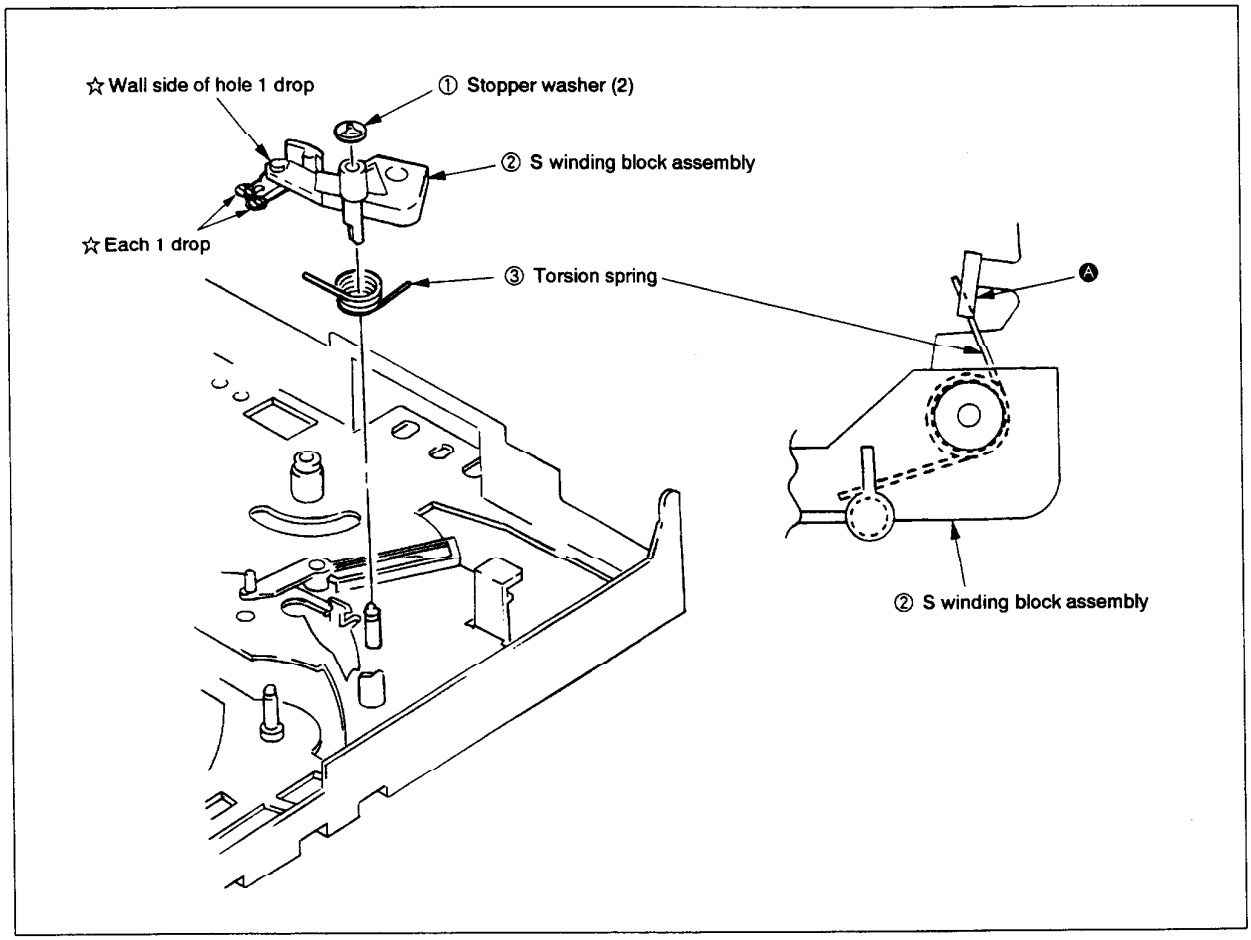


Fig. 3-25

3-24. TRIGGER LEVER AND RKB BLOCK ASSEMBLIES (Fig. 3-26)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove main slider. (Refer to 3-18.)
5) Remove tension spring ① in the order Ⓐ to Ⓑ to remove trigger lever assembly ②.
6) Remove screws (3 × 8) ③ to remove RKB block assembly ④.

[Note on Mounting]

• Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portions on trigger lever assembly. (Fig. A)

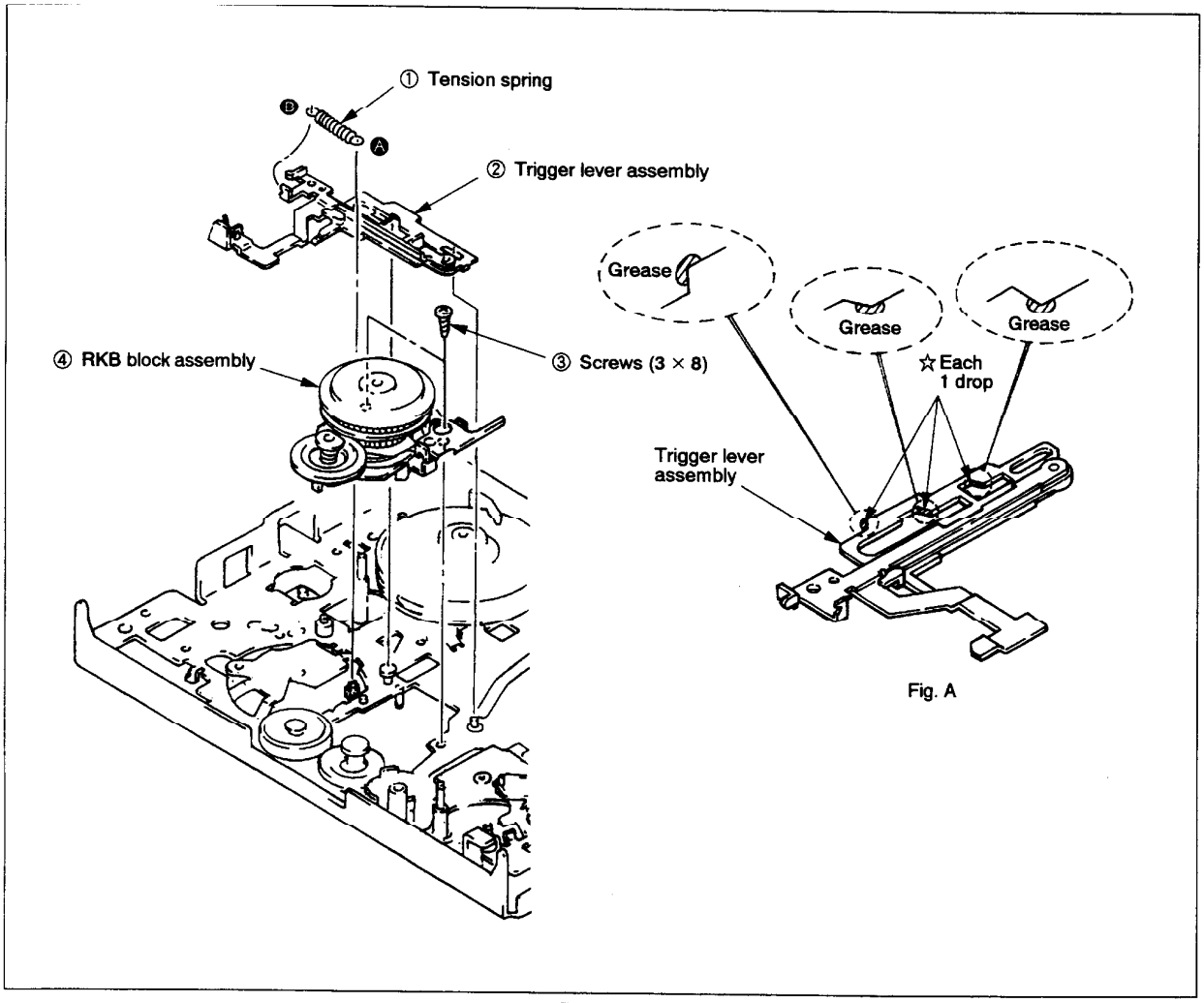


Fig. 3-26

4. ADJUSTMENT

4-1. TAPE PATH ADJUSTMENT

The "Tape path" refers to the route of the tape from the supply reel disk to the take-up reel disc via the video heads.

Each component part of the tape transport system particularly the surface of parts which make direct contact with the tape must always be kept clean, free of dust, oil, scratches and so forth.

The tape path system is factory preadjusted, when parts of the tape transport system are replaced, be sure to make the required adjustments as precisely as possible in order to ensure stable tape transport.

4-1-1. TENSION REGULATOR (TG1) POSITION/ TENSION ADJUSTMENT (Fig. 4-1)

Purpose: stabilizes contact of the video head and the tape to maintain the tension of the tape so that it feeds at a constant level.

• Position adjustment

Mode	Treading is completed without a cassette loaded
Adjustment locations	Eccentric pin of TG1 band assembly

[Adjustment Method]

1) Allow the unit to go through the threading procedure without a cassette loaded.
2) Set the unit to play back, then turn the eccentric pin so that the tip of tension arm goes to the left side line carved on the mechanical chassis. (Fig. A)
3) After adjustment, go through the loading procedure once more without a cassette loaded, then check the position of the tension arm.

• Tension adjustment

Mode	Playback
Measuring instrument/tool	Torque cassete
Adjustment locations	Position for hooking the tension spring
Specified value	36 to 44 g•cm

[Adjustment Method]

1) Playback the torque cassette.
2) Check that the center value deviation reading on the torque cassette meets with the standards.
3) When the reading is higher than the standards: Move the spring toward direction Ⓐ.
   When the reading is less than the standards: Move the spring toward direction Ⓑ.

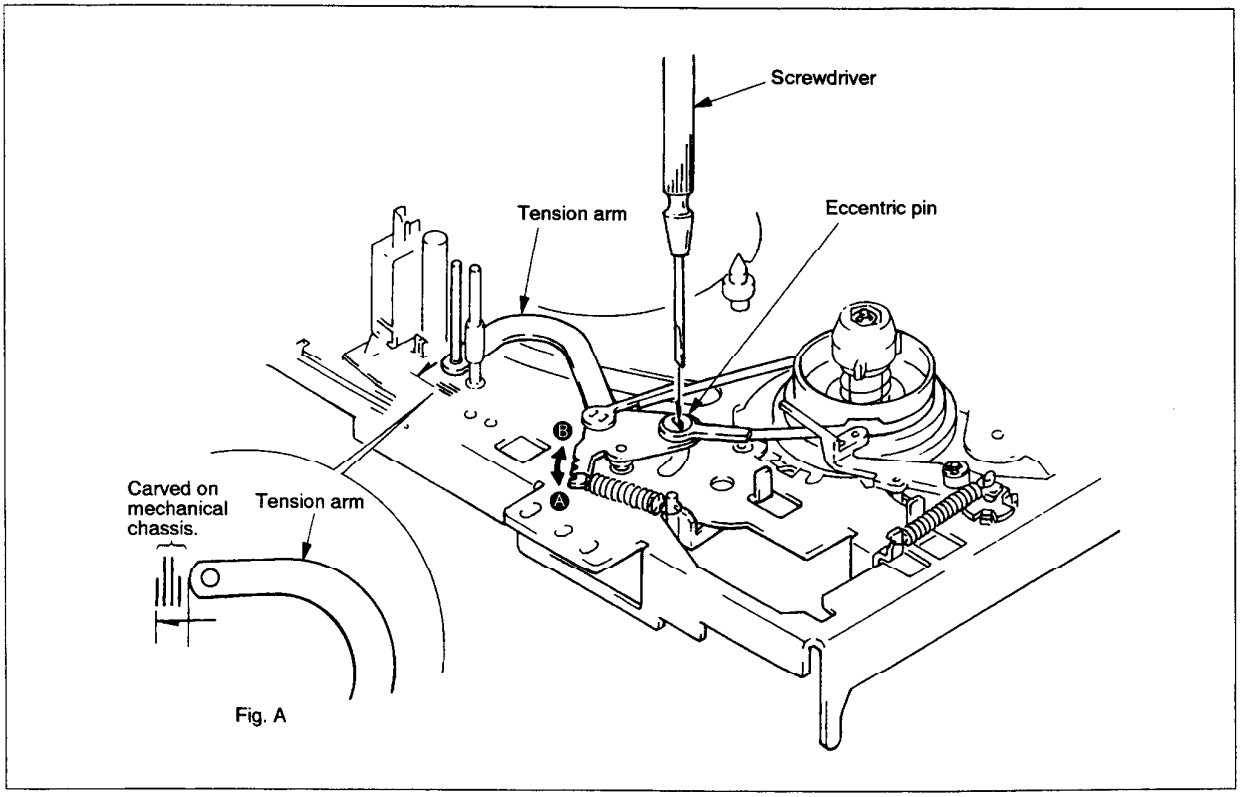


Fig. 4-1

4-1-2. TG8 GUIDE ROLLER HEIGHT ADJUSTMENT (Fig. 4-2)

Mode	Playback
Jig	Blank tape
Adjustment locations	Guide roller height adjustment screw
Specified value	0 to 0.1 mm

Procedure:

1) Set the tape, during CUE playing back, check the height from lower flange of TG7 to the running tape. (Fig. A)
2) During REV playing back, check the height from lower flange of TG7 to the running tape. (Fig. B)
3) When the difference between items 1) and 2) doesn't go to specified value, adjust by turning TG8 guide roller height adjustment screw.
4) Check the tape is creased or not between the capstan and TG8, adjust with TG8 guide roller height adjustment screw so that the tape is not creased during normal playback, CUE and REV.

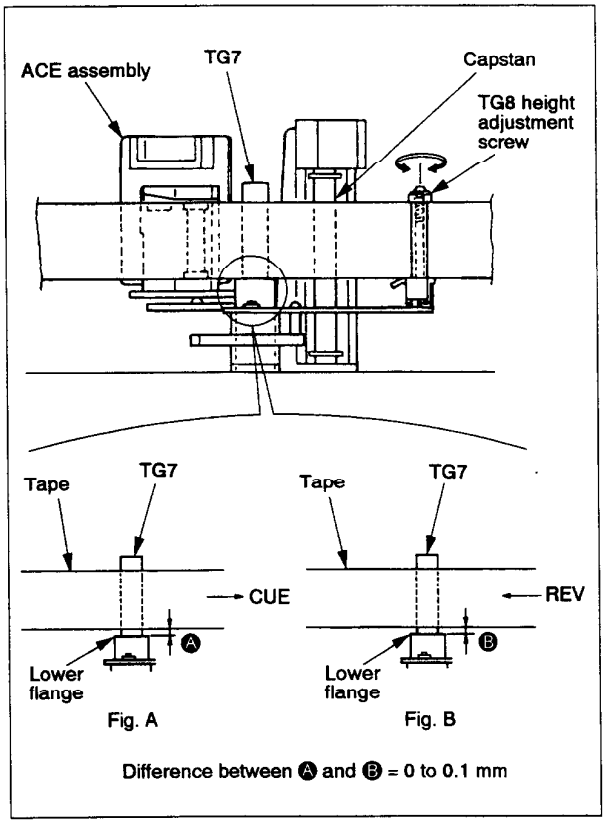


Fig. 4-2

4-1-3. HEIGHT ADJUSTMENT OF GUIDE ROLLERS NO. 3 AND NO. 6 (Fig. 4-3)

Mode	Playback
Signal	Alignment tape
Measuring instrument	Oscilloscope
Measuring point	CH-1: Connector PB RF pin for RF PC board check. CH-2: Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller height adjuster screw

[Adjustment Method]

1) Tracking (playback): Turn off the auto tracking, then press the tracking buttons ▽ and △ simultaneously to set the tracking at the center position.
   (If adjustment is made after the drum is replaced, the tracking must be set at the max. RF output position.)
2) Height adjuster screw: Even out the RF output waveforms.
3) Press the tracking buttons (playback), ▽ and △ alternately.
4) Check that RF output drops the same amount at the front and rear edges.

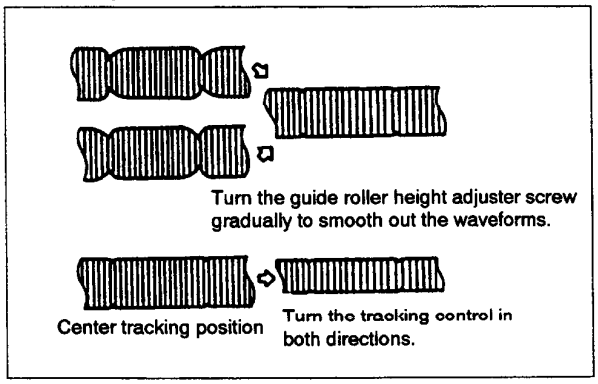


Fig. 4-3

4-1-4. ACE HEAD ASSEMBLY ADJUSTMENT (ROUGH ADJUSTMENT) (Figs. 4-4 and 4-5)

Purpose: Allows the tape to make even contact with the head for recording and playback of the specified track.

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut, Tilt adjuster screw

[Adjustment Method]

1) Mount the ACE head assembly. At this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or rise up noticeably near the ACE head.
4) If the tape curls up or rises noticeably, readjust the tilt adjuster screw, the azimuth adjuster screw and the height adjuster nut.
   (The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

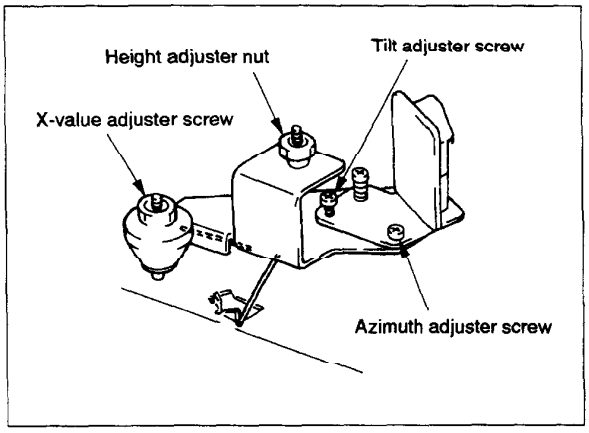


Fig. 4-4

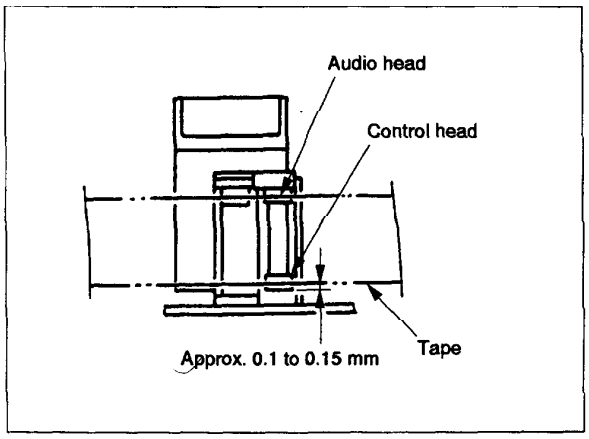


Fig. 4-5

4-1-5. ACE HEAD ASSEMBLY ADJUSTMENT (PRECISION ADJUSTMENT)

Mode	Playback
Signal	Alignment tape (1kHz track)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw, Height adjuster nut, Tilt adjuster screw

[Adjustment Method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or rise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

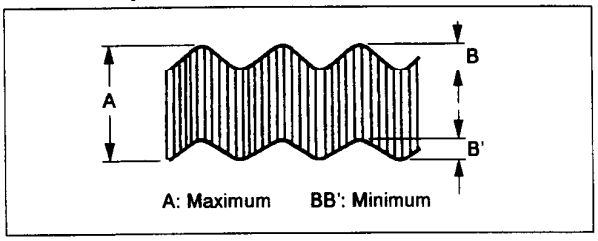


Fig. 4-6

4-1-6. X-VALUE ADJUSTMENT

Purpose: To obtain compatibility with other VTR

Precaution: Be sure to perform the preset tracking adjustment before perform this adjustment. (Refer to the Service Guide.)
Turn off the auto tracking and set the VTR for manual tracking mode.

Mode	Playback
Signal	Alignment tape
Measuring instrument	Oscilloscope
Measuring point	CH-1: Connector PB RF pin for RF PC board check. CH-2: Connector RF SW P pin for RF PC board check.
Adjustment locations	X-value adjuster screw

[Adjustment Method]

- **Adjustment by Hi-Fi alignment tape (NTSC only)**
  When the tracking is set at the center position (by pressing the ▽ and △ keys simultaneously), adjust the RF output to maximum.

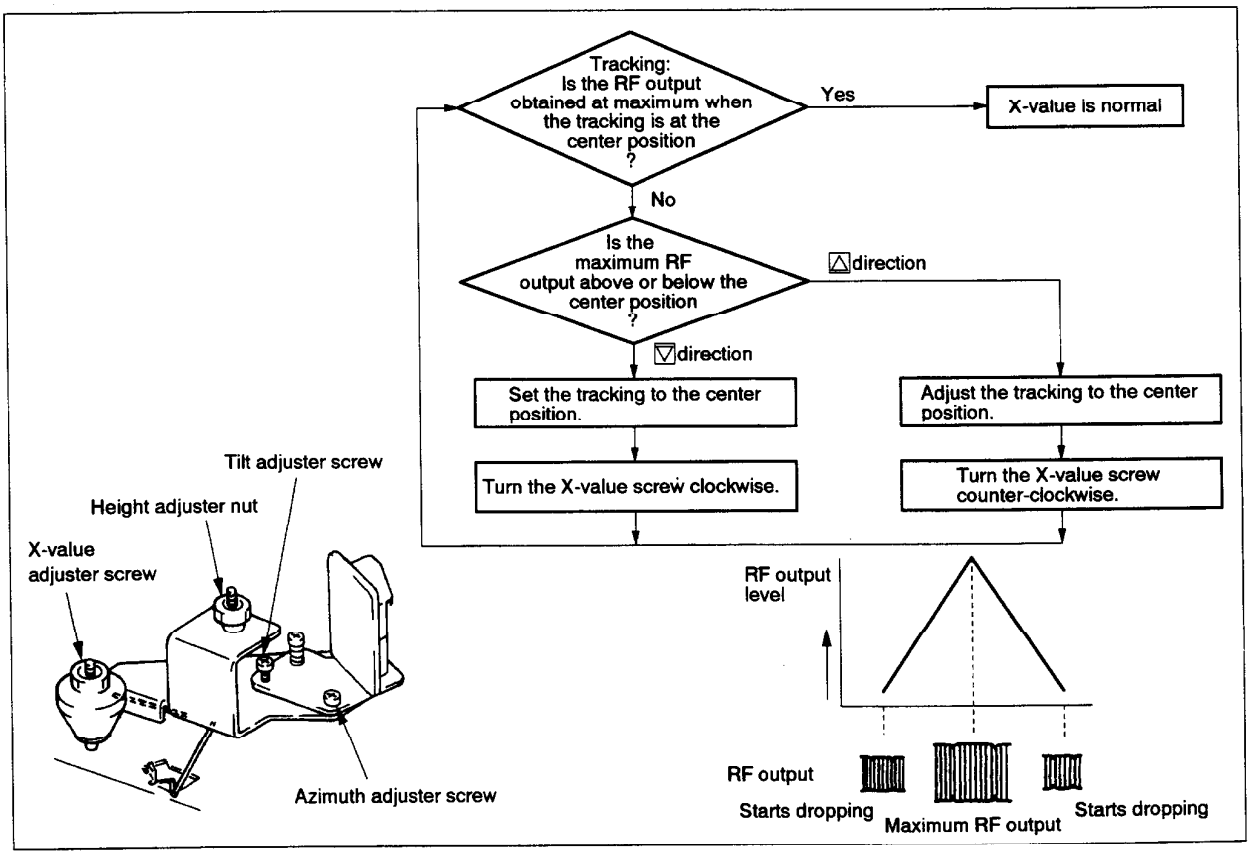


Fig. 4-7

- **Adjustment by alignment tape**

  Adjust the X-value adjuster screw so that maximum RF output is obtained and also that the RF output drops to the same position on pressing the respective ▽ and △ buttons while the tracking is set at the center position.

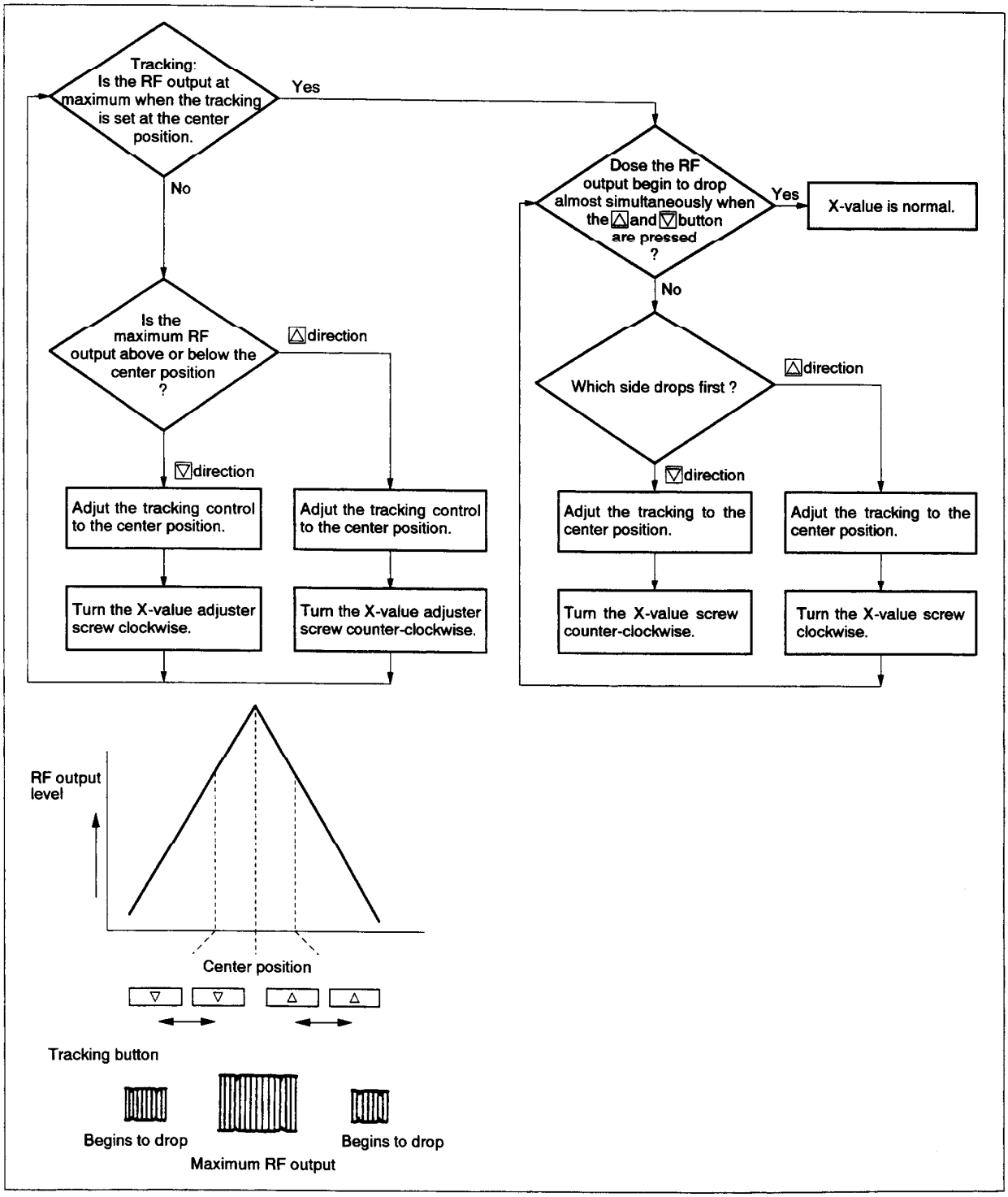


Fig. 4-8

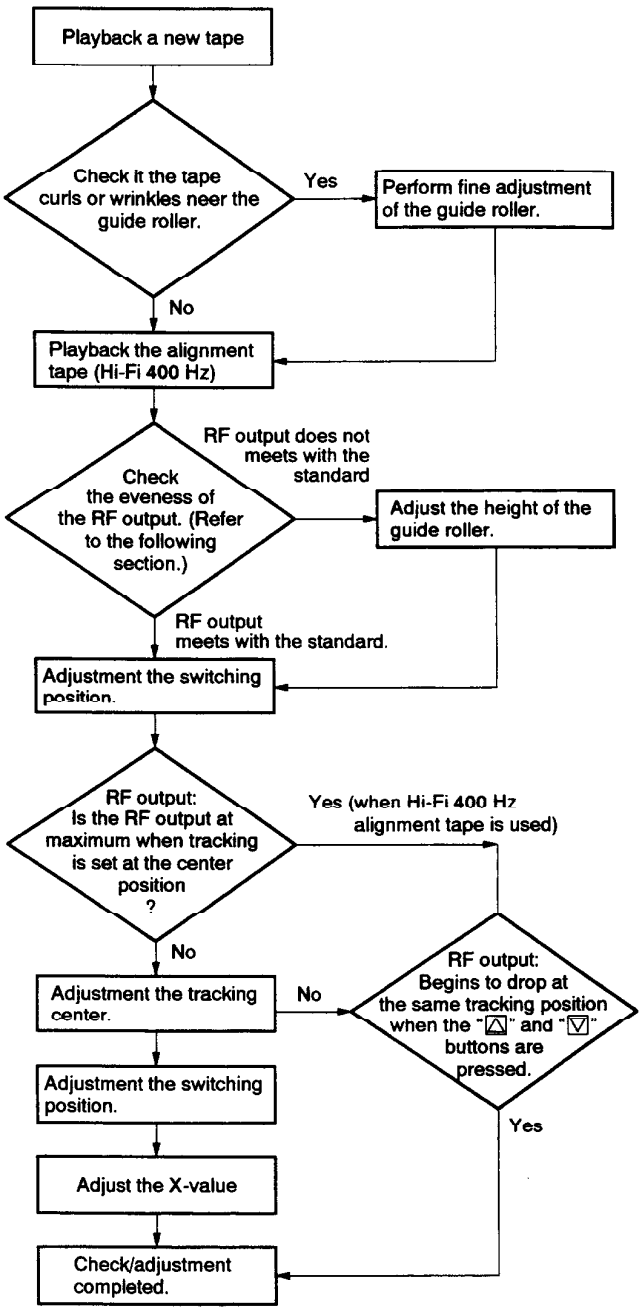
4-1-7. ADJUSTMENTS AFTER REPLACING THE DRUM (VIDEO HEAD)

Purpose: Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Precaution: Turn off the auto tracking and set the manual tracking mode.

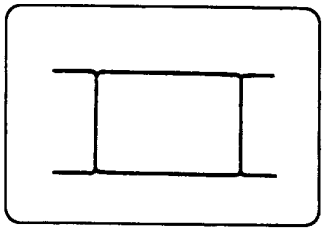
Mode	Playback
Signal	Alignment tape, blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1: Connector PB RF pin for RF PC board check. CH-2: Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller (refer to 4-1-2, 4-1-3.) Switching position, Tracking preset, SP delay mono-multi (Refer to the Service Manual), X-value. (refer to 4-1-6.)

[Adjustment Method]

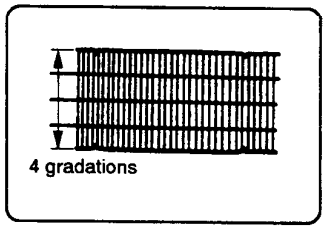


[Checking the evenness and fluctuation of the RF output]

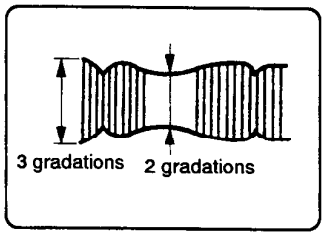
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-8. CHECKING THE TENSION AND TORQUE

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.

If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adaptor

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170 g•cm or more
Review torque	Review	Supply reel	180 ± 30 g•cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	95 ± 25 g•cm (using the torque cassette)
Back tension torque	Playback	Take-up reel	33 to 44 g•cm (using the torque cassette)

[Check Method]

Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

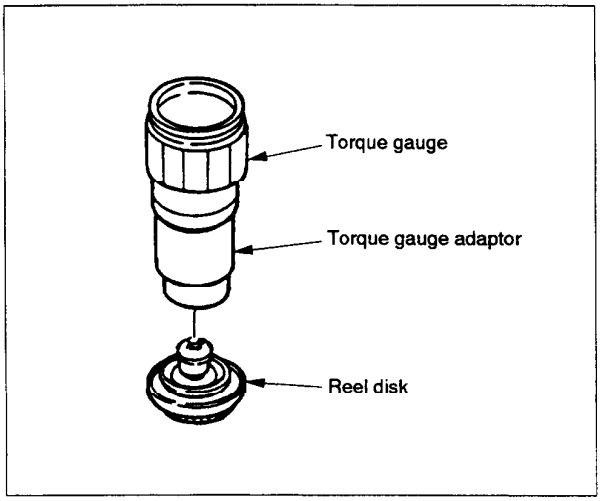


Fig. 4-9